HKB

Hochschule der Künste Bern
Haute école des arts de Berne
Bern University of the Arts

Symposium

The Future Sound of Pop Music

Thursday, 30 November to Saturday, 2 December 2017

Bern, HKB, Ostermundigenstrasse 103, Auditorium

A symposium by the Bern University of the Arts, in collaboration with the Institute of Musicology/Bern University, IASPM D-A-CH, and norient.com

Supported by the Swiss National Science Foundation

Programme

www.futuresoundofpopmusic.net

The Future Sound of Pop Music
The significance of individual sounds – their origins, their development and their future – has until now rarely been an object of research in popular music. This symposium will discuss how the sound aesthetic of popular music has changed over the past decades. It will debate how sounds have been created, how they are employed, and how they are constantly being renewed and replaced by new sounds. Last but not least, the symposium will discuss the future of sounds in pop music by addressing the following questions:
· How are sounds modified, manipulated and transformed today, and how will this be done in the future?
· What role do new interfaces and controllers play in the development of new sounds?
· What do current sound generators offer?
· What new sound generators might we expect in the future?
· How will pop music sound, 10 or 20 years from now?

This symposium is part of the HKB research project "Cult sounds" For more information, see www.hkb.bfh.ch/interpretation or www.cult-sounds.com.

Organisation
A symposium by the Bern University of the Arts, Research Area Interpretation

In collaboration with

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NORIENT
NETWORK FOR LOCAL AND GLOBAL SOUNDS AND MEDIA CULTURE

Institute of Musicology

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Lead: Immanuel Brockhaus, Thomas Burkhalter
Assistance: Sabine Jud, Daniel Allenbach, Martin Skamletz

Thursday, 30 November 2016

12–13   Registration, Coffee

13.00   Welcome – Peter Kraut (HKB Music), Thomas Gartmann (HKB Research)

Panel 1 – Sounds I (Chair: Immanuel Brockhaus/Thomas Burkhalter)

13.15   **Bruno Spoerri (Zurich)**
Keynote: The Promised Land of New Sounds – Yesterday, Today and Tomorrow

14.00   **Peter Kraut (Bern)**
Sounds und Standards – ein schwieriges Verhältnis

14.30   **Michael Harenberg/Daniel Weissberg (Bern)**
«Are sounds just sounds or are they Beethoven?». Annäherungsversuch an ein Phantom

15.00   Coffee Break

Panel 2 – Sounds II (Chair: Immanuel Brockhaus/Thomas Burkhalter)

15.30   **Katia Isakoff (London)**
Keynote: Creating a Musical Use for Electricity (A Romance Novel)

16.30   **Robert Michler (Bern)**
Erweiterte Soundästhetik der rhythmischen Elemente im Groove der Popmusik

17.00   **Benoît Piccand/Jürgen Strauss/Gaël Martinet (Bern)**
3D audio. Pop und Raum – vom Tonstudio bis in die Hosentasche

18.30   Free evening

Friday, 1 December 2017

Panel 3 – Aesthetics (Chair: Anja Brunner)

9.30 **John Chowning (San Francisco)**
Keynote: FM Synthesis – Fifty Years

10.30 **Heiko Wandler (Karlsruhe)**
Der Einfluss der Synthesizer auf die Ästhetik der elektronischen
Klubmusik

11.00 Coffee break

11.30 **Christofer Jost (Freiburg/Basel)**
Weite, Fülle, Präzision. Über die Klangästhetik des Gitarren-Delays und
dessen Bedeutung in gegenwärtiger Popmusik

12.00 **Christina M. Heinen (Oldenburg)**
"Music of Black Holes and Sounds from Space". LIGO sonification and its
Creative Side-Effects

12.30 **Christophe Fellay (Sion/London)**
Rhythm and Noise

13.00 Lunch Break

Panel 4 – Technology (Chair: Immanuel Brockhaus/Thomas Burkhalter)

14:30 **Jan Herbst (Bielefeld)**
Old sounds with new technologies? Examining the creative potential of
guitar "profiling" technology from a production perspective

15.00 **Jack Davenport (Lancashire)**
Playful Musical Interfaces. Introducing the "Sound of Colour"

15.30 **Werner Jauk (Graz)**
Forward Back … Sound-Gesture-Technologies. The Im-Mediate Bodily
Shaping of Immaterial Sound & Sonic Pop-Culture

16.00 Coffee Break

16.30 **Fereydoun Pelarek (Sydney)**
Sound Design Techniques of the Live Looping Performance Artist

17.00 **Lippold Haken (Illinois)/Edmund Eagan (Ottawa)**
Keynote: Finger Control of Timbre throughout Each Note. Challenges for
New Controllers and New Sound Generators

18.30 Dinner

20.00 Haken Continuum – **Workshop Lippold Haken/Edmund Eagan**
A New Paradigm for Timbre Control. Finger-Influenced Patching in the
EaganMatrix

Saturday, 2 December 2017

Panel 5 – Philosophy & Sociology (Chair: Britta Sweers)

9.30 **Wayne Marshall (Boston)**
Keynote: From Breakbeats to Fruity Loops. Small Sounds and Scenes in the Age of the DAW

10.30 **Robin James (Charlotte)**
Novelty, Speculation, Wake. How Pop Music Conceives of "the Future" (1983–2017)

11.00 Coffee Break

11.30 **Georgi Georgiev (Berlin)**
The Future of Techno

12.00 **Marie Thompson (Lincoln)**
Keynote: The (Feminized) Noise of Pop

13.00 Lunch Break

Panel 6 – Reception & Sociology (Chair: Britta Sweers)

14.30 **Hannes Liechti (Bern)**
Rattling Chains and Cackling Chickens. Non-Musical Sampling in Experimental Electronic Pop

15.00 **Holger Lund (Ravensburg)**
The Master's Master? Neue Soundästhetiken durch post-produktives Mastering und Vinylcut

15.30 Coffee Break

Panel 7 – Virtuality (Chair: Immanuel Brockhaus/Thomas Burkhalter)

16.00 **Annie Goh (London)**
Sounding Cyber*feminist Futures. Speculations on Sonic Unknowns

17.00 **Ruben Brockhaus/Studygroup HTW Berlin (Berlin)**
V:Age – Individualisierung von virtuellen Instrumenten durch Alterung

17.30 **Marie-Kristin Meier (Berlin)**
Immersion als ästhetische Strategie in Virtual Reality Experiences und elektronischer Musik

19.00 **Concert Bruno Spoerri: CAJ (Computer-assisted Jazz)**

End of the Symposium

Abstracts/Biographies

Bruno Spoerri (Zürich)
The promised land of new sounds – yesterday, today and tomorrow
In 1967 a demonstration record for the first Moog synthesizers promised: "With suitable control devices virtually any sound can be produced". Has this promise been fulfilled? Can we really produce all sounds we need? And furthermore: Do we really have the suitable control devices to achieve this? Today we seem to have more technical possibilities than ever – but do we really use them to produce outstanding music?

Bruno Spoerri (*1935) began his career as a saxophone player in various amateur jazz groups. After studies in Psychology he made the music his profession, composing music for advertisement, documentaries and other movies, television jingles and radioplays. Since 1965 he works by the means of the electronic music, being one of the co-founders of the Swiss Centre for electronic music in 1985. His main interests are in improvisation with electronics. In 2005 he published his book *Jazz in der Schweiz*, in 2010 *Musik aus dem Nichts. Die Geschichte der elektroakustischen Musik in der Schweiz.*

Michael Harenberg/Daniel Weissberg (Bern)
«Are sounds just sounds or are they Beethoven?»[1]
Annäherungsversuch an ein Phantom
Gammaray (1972) der Gruppe Birth Control: Ein regelmässiges Knacksen. Es beschleunigt sich kontinuierlich, wird allmählich zur ansteigenden Tonhöhe. Nach einer Weile wird das Klang gewordene Knacksen von der einsetzenden Band abgelöst.
Believe (1998) der Sängerin Cher: Eine exzessiv genutzte automatische Tonhöhenkorrektur prägt die Wirkung der Stimme. Es ist nicht die Klangfarbe, sondern die Abfolge «unmenschlich» reiner Tonhöhen, die den Charakter bestimmt.
In beiden Beispielen meint Sound mehr, als sich mit den Parametern der physikalischen Akustik fassen lässt:
Die Grenze zwischen einem Komponieren von Klängen und einem Komponieren mit Klängen ist fliessend, in der elektronischen Musik hat sie sich aufgelöst. Für die Wirkung eines Klangs ist sein Kontext ebenso bestimmend wie die Eigenschaften des Klangs selbst, und mit dem Flügel auf der Bühne wird, im Unterschied zum Plugin im Laptop, in den Köpfen des Publikums ein klangliches Potenzial wirksam, noch bevor der erste Ton erklingt.
Seit dem 19. Jahrhundert werden Klänge zunehmend technisch beschrieben und damit, ästhetisch repräsentationslos, zu frei flottierenden Signifikanten in Assoziationsräumen, die weniger strukturell als durch Wahrnehmungsmuster einer entfesselten Klangsinnlichkeit geprägt werden. «Sound» wird zu einem vielfältigen Schnittstellenphänomen im Bereich technisch reproduzierter und produzierter Klänge.

Daniel Weissberg (*1954 in Basel) studierte Klavier bei Klaus Linder und Komposition bei Jacques Wildberger sowie der elektroakustischen Musik bei David

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[1] John Cage: *Compostion as process III. Communication* (1958).

Johnson am Konservatorium (heute Musikhochschule) Basel. Anschliessend Studium in der Klasse für Neues Musiktheater von Mauricio Kagel. Assistent von Kagel an der Musikhochschule Köln. Sein Schaffen umfasst Solo- und Kammermusik sowie Orchesterwerke, Hörspiele, elektronische Musik, installative und konzertante Medienkunstarbeiten sowie Werke im Bereich des Neuen Musiktheaters. An der Hochschule der Künste Bern ist er Dozent und Co-Leiter des Studienbereichs Sound Arts. Musik und Medienkunst sowie des «Master of Contemporary Arts Practice» (CAP). Er ist Autor verschiedener Radio-Features und von Beiträgen zu musikalischen Themen und u. a. Mitinitiator des Forschungsprojekts «Klang (ohne) Körper» und Mitherausgeber des gleichnamigen Buchs.

Michael Harenberg (*1961) studierte systematische Musikwissenschaft in Gießen und Komposition an der städtischen Akademie für Tonkunst bei Toni Völker in Darmstadt. Medienwissenschaftliche Promotion bei Prof. Dr. Georg Christoph Tholen an der Universität in Basel. Als Komponist sowie als Musik- und Medienwissenschaftler beschäftigt er sich kompositorisch wie theoretisch mit digitaler Audio-Kultur und computergenerierter Musik im Rahmen live-elektronischer, installativer sowie improvisierter Musik. Diverse Preise und Stipendien sowie internationale Vorträge und Publikationen zum Schwerpunkt «Musik und digitale Medien». Er ist Mitglied in verschiedenen Improvisations- und Kompositionsensembles mit internationaler Konzerttätigkeit und lebt als Komponist und Musik-/Medienwissenschaftler in Bern.

Katia Isakoff (London)
Creating a Musical Use for Electricity (A Romance Novel)
In 2016, Katia performed at Electri_City Conference (Dusseldorf) alongside John Foxx, Steve D'Agostino and Karborn, adding her newly adopted Moog Theremini to the sonic architecture of their audio/graphic novel *Evidence of time Travel*; previously premiered at the British Film Institute, Southbank (UK) and Sonic Acts Festival (Amsterdam). In the lead-up to this performance, she had cause to abandon her original instrument of choice – the Etherwave Theremin – and to reconsider her choice of sound and its placement within the live mix. Moreover, to consider what the audience's expectation might be having heard there was to be a guest thereminist.
"But instruments do not make music: people do." (Max Rudolph, 1992)
By tracing the history and development of the space-controlled ether-wave Theremin, and examining Moog's latest model - the Theremini; this talk seeks to explore the ways in which musicians inform and influence the development, reception and adoption of new and existing instruments, therefore, sounds.

Katia Isakoff is a composer, multi-instrumentalist, music producer (Mute Records, EMI, Universal and Metamatic Records) and studio owner. She holds two NFP roles: co-chair of the Association for the Study of the Art of Record Production and founder of Women Produce Music (WPM). Current activities include: co-editing a book for Routledge, *The Art of Record Production, Volume 2: Creative Practice in the Studio* and a WPM project (supported by Moog Music Inc. amongst others).

Robert Michler (Bern)

Erweiterte Soundästhetik der rhythmischen Elemente im Groove der Popmusik

Die Popmusik wurde seit ihrem Entstehen von Medien und Musiktechnologien geprägt, betreffs rhythmischer Aspekte sind hierbei seit den 80er-Jahren vor allem die Drum Machines, der MIDI-Standard sowie deren Anbindung und digitale Transformation auf spätere, virtuelle Produktionstools zu nennen. Für aktuelle Produktionen steht somit eine grosse Bandbreite an analogen und digitalen Tools zur Verfügung, um die Ästhetik des Groove – eines wesentlichen Definitionsmerkmals für Popmusik und Grundlage für die rhythmische Ordnung – durch Klanggestaltung und Sounddesign zu gestalten. Rhythmische Elemente werden dabei nicht mehr nur als altbekannte, perkussive Klänge abgebildet, sondern verlagern sich vielmehr in künstliche Klangkonstrukte; traditionell geprägte Drum-Grooves und Patterns werden dabei aufgelöst oder codiert.

Wie werden diese Klänge produziert und in Performances umgesetzt oder eingebunden? Wie lassen sich analoge Klangerzeuger mit digitalen Workstations technisch und klanglich verbinden, und welche Referenzen aus den Zeiten analoger Klangtechik sind bis heute massgeblich?

Untersucht werden soll auch der Einfluss, den diese Herangehensweise auf die gesamte Klangästhetik aktueller Popmusik hat, und ob es genretypische Sounds gibt, die eine Einteilung und Einschätzung zur gegenwärtigen Entwicklung nahelegen.

Robert Michler (*1974) ist studierter Jazz-Schlagzeuger und war als Performer lange im Bereich Jazz, Rock/Pop und Filmmusik für Konzerte und Produktionen mit eigenen Projekten tätig. Als ausgebildeter Musik-Pädagoge für Maturitätsschulen unterrichtet und assistiert er im Kanton Bern und an der Hochschule der Künste (HKB) im Weiterbildungs-Studiengang «MAS Pop&Rock».

Seine Abschlussarbeit für den Master of Research in Musikwissenschaft an der Uni Bern beschäftigt sich mit den analogen Drum Machines der 80er-Jahre und deren Wirkung auf Soundästhetik und Auffassungen zum Groove. Seine Dissertation mit geplantem Abschluss für 2020 zur Quantisierung in der Popmusik schreibt er innerhalb der Graduate School of the Arts (GSA) in Bern.

Jürgen Strauss/Gaël Martinet/Benoît Piccand (Bern/Paris)

3D audio. Pop und Raum – vom Tonstudio bis in die Hosentasche

Seit es Tonaufnahmen gibt, wurde der Raum als eine der wichtigen Komponenten der Klanggestaltung in die Produktionstechnik integriert.

Räumlichkeit mittels durch ihre begrenzte Kanalzahl mehr oder weniger portablen Distributionsformaten zu vermitteln, war, ist und bleibt eine Herausforderung; eine möglichst umhüllende Hörerfahrung für stereophone Medien zu erzeugen ist umso schwieriger.

Hier erfolgt deshalb der Versuch, zu eruieren, welche ästhetische Optionen in Bezug auf die Gestaltung von virtuellen Räumen – durch die Nutzung neuer Werkzeuge innerhalb eines weitgehend standardisierten Produktionsworkflows – dem neugierigen Tonmeister offen stehen.

Der Vortrag ist dreiteilig; danach laufen den ganzen Tag lang Demos, so dass alle Teilnehmer die Möglichkeit haben, sich die diversen Mix-Beispiele und vorgestellten Techniken anzuhören.

Jürgen Strauss
Glenn Gould – «Vom Konzertsaal ins Tonstudio» und «The Acoustic Orchestrations»
Die musikalische Kunst Glenn Goulds ist in manchen Teilen durch seine Auseinandersetzung mit den Techniken der Elektroakustik geprägt.
Seine Beobachtungen und Höreindrücke zur Direktschallakustik und seine Vorschläge zur Verräumlichung von Studioaufnahmen für HIFI-Hörer wirken rückblickend wegweisend.

Jürgen Strauss absolvierte eine Ausbildung als Physiklaborant bei der Landis & Gyr in Zug (1985). Innerhalb der Elektroakustik spezialisierte er sich auf die Entwicklung von Beschallungssystemen für Studios, Konzertsäle, Kirchen, Museen und Kinos. Durch die Verbindung von Elektro- und Raumakustik, hat sich sein Tätigkeitsbereich auf die Architektur und Tonmeisterei erweitert. In Ergänzung zu seinem Interesse an systematischer Akustik, setzt er sich mich mit Fragen der Wissenschafts-, Technik- und Kunstgeschichte auseinander. Strauss ist Gründer und Inhaber der Strauss Elektroakustik GmbH. Referenzprojekte: Sony Music Studios, Tokyo (2000); BMW Museum, München (2006); Werkraumhaus, Bregenzerwald (2013); Max-Planck-Institut für empirische Ästhetik/Artlab (2015).

Gaël Martinet
SPAT revolution. Immersive audio
Based on research by the Acoustic and Cognitive Spaces Team at IRCAM and on Flux:: experience within the field of professional audio tools, the SPAT Revolution is a comprehensive and sophisticated real-time Immersive 3D Audio engine, providing acoustics simulation with multiple rooms and localization for surround and multi-channel use, supporting unlimited number of input/output channels and sources as well as unlimited number of input/output transcoders (Channel Based Splitter/Aggregator, HOA To HOA, HOA To Channel Based, A-Format to B-Format, A/B-Format To Channel Based, B-Format To UHJ, UHJ To B-Format, MS To Channel Based, Binaural To Transaural, Transaural To Binaural, Eigenmike To Channel Based).

Flux:: sound and picture development has its roots in the 1990's during the early days of digital audio software workstations. Back then the selection of audio software tools was quite limited, and in lack of the right software tools **Gaël Martinet**, the founder of Flux:: at the time a seasoned sound engineer in the recording, mastering and post-production world in Paris, France, piled up with books about C++ programming fully determined to create the tools he needed himself.

Benoît Piccand
Anwendungsbeispiele & Techniken. 3D audio für die Hosentasche
Eine spezifische Produktion, mit diversen Mikrofonierungssystemen (close-ups & room, mono, stereo, surround & ambisonic) aufgezeichnet, wird in einer normierten 5.1-Umgebung gemischt und dazu parallel als Stereo-Reduktion für binaurales (Stereo/Kopfhörer) sowie transaurales (Stereo/Lautsprecher) Hören aufbereitet. Das Potential und die Begrenzungen der jeweiligen Formate werden untersucht und als mögliche Lösungsansätze überlappende und kombinierte Techniken entwickelt, um die Schwächen der jeweiligen eingesetzten Methoden zu kompensieren.

Benoît Piccand (*1966) erhielt klassischen Gitarrenunterricht am Konservatorium Bern, danach wandte er sich der Rockmusik und der Improvisation zu. 1992 machte er seinen Abschluss bei Axel Fischbacher an der Swiss Jazz School in Bern. Er besuchte Meisterkurse bei Joe Diorio, Scott Henderson, John Scofield und Mick Goodrick. Seit den späten 1980er-Jahren ist er im Tonstudio tätig. Er arbeitet mit Musikern und Künstlern aus allen Sparten und hat ein eigenes langjähriges Projekt (BPP). Piccand arbeitet als Produzent und Toningenieur in den Bereichen Klassik, zeitgenössische, elektronische und experimentelle Musik sowie Jazz, Pop und Rock-musik. Er ist Studioleiter und Dozent für Audiotechnik an der Hochschule der Künste Bern und nimmt an diversen Forschungsprojekten und Meisterkursen in Asien und Europa teil.

John Chowning (San Francisco)
FM Synthesis – Fifty Years
Its' discovery in 1967 led to increasing interest in producing music by computers within the academic world because of its efficiency and the breadth of possible sounds. The development of the technique then led to interest from the music industry of which only one company understood the implications of the sampling theorem and also supported a research environment to exploit FM synthesis – Yamaha. With the introduction of the all-digital and programmable DX7 in 1983, computer music was democratized, no longer confined to large institutional computers. The collaboration between Yamaha and Stanford University was preceded by collaboration between disciplines within Stanford and the formation of CCRMA in 1974 where broad applications of computer technology to acoustics and music were pursued.
This paper shall give insights into the discovery and development of FM and shed new light on the actual projects at Stanford concerning sound studies and technology and the role of the institution in connection to other important researchers.

John Chowning studied music at Wittenberg University and composition in Paris for three years with Nadia Boulanger. In 1966 he received the doctorate in composition from Stanford University, later he discovered the frequency modulation (FM) algorithm in which both the carrier frequency and the modulating frequency are within the audio band. This breakthrough in the synthesis of timbres allowed a very simple yet elegant way of creating and controlling time-varying spectra. Beginning in 1966 Chowning taught computer-sound synthesis and composition at Stanford University's Department of Music and was the founding director in 1974 of the Center for Computer Research in Music and Acoustics (CCRMA), one of the leading centers for computer music and related research. For his work he received numerous awards.

Heiko Wandler (Karlsruhe)
Der Einfluss der Synthesizer auf die Ästhetik der elektronischen Klubmusik
Die Ästhetik der elektronischen Klubmusik ist massgeblich von den klanglichen Eigenschaften der Synthesizer geprägt («elektronische Klubmusik» wird hier als Oberbegriff verwendet für Musik, die im Umfeld der Klubkultur entstanden ist). In diesem Vortrag wird dargestellt, welche Synthesizer sich in der elektronischen Klubmusik durchgesetzt haben und wie die Kompositionsweise und Klangästhetik

davon geprägt wurde. Damit zusammen hängt auch die Frage, warum manche Synthesizer häufiger verwendet wurden als andere, was zur Betrachtung des Klangcharakters, der Bedien- bzw. Benutzeroberfläche und auch der verschiedenen Klangsyntheseverfahren führt. Zudem werden Merkmale von genretypischen Klängen (z. B. Reese-Bass, Hoover, TR-808-Bassdrum) und davon ausgehend Merkmale des Klangideals verschiedener Genres der elektronischen Klubmusik, wie beispielsweise Techno, Dubstep, Trap und Breakcore beschrieben. In diesen Bereichen zeigte sich eine Entwicklung zu einer neuen Klangästhetik die unter anderem von einem brachialeren und voluminöseren Klangbild geprägt ist. Diese Entwicklungen in der elektronischen Klubmusik beeinflussten immer wieder die Popmusik und wirkten sich damit auch hier auf die Klangästhetik aus.

Heiko Wandler arbeitete nach seinem Studium der Fächer Musikwissenschaft, Soziologie, Philosophie, Multimedia und Musikinformatik unter anderem an der Hochschule für Musik Karlsruhe, wo er über den Einfluss der elektroakustischen Musikinstrumente und der Tonstudiotechnik auf das Klangbild und das Klangideal der Populären Musik promovierte. Seit 2009 ist er an der Popakademie Baden-Württemberg Studiengangsmanager und Dozent für Geschichte der Populären Musik und Klangsynthese.

Christofer Jost (Freiburg/Basel)
Weite, Fülle, Präzision. Über die Klangästhetik des Gitarren-Delays und dessen Bedeutung in gegenwärtiger Popmusik
Technologien haben in der Entwicklung der Popmusik stets eine tragende Rolle gespielt. Der Vortrag widmet sich einer technischen Vorrichtung, die diesen Tatbestand paradigmatisch verdeutlicht: dem Delay-Effekt für Gitarren. Es soll ein differenzierter Blick auf den Beitrag des Delays zur Entstehung klangästhetischer Konfigurationen und Muster in der jüngeren Popmusik eröffnet und sein Stellenwert für gegenwärtige resp. zukünftige Produktionen taxiert werden. Zu diesem Zweck werden behandelt: erstens technikgeschichtliche und kulturelle Aspekte, zweitens populäre Anwendungsformen und drittens stilistische Referenzphänomene:
Das Gitarren-Delay war in den 1980er-Jahren Teil eines stilistischen wie kulturellen Neuorientierungsprozesses innerhalb der Rockmusik. Auffallend ist, dass erst nach der Einführung des vollelektronischen Analog-Delays, welches günstiger und wesentlich handlicher war als das seinerzeit gängige Tape-Delay, eine nachhaltige Diffusion delaybasierter Gitarren-Parts in die Popmusik begann. Die wohl markanteste und populärste Form der Delay-Anwendung geht auf den U2-Gitarristen The Edge zurück. An seinem Beispiel soll detailliert aufgezeigt werden, wie sich durch den Gebrauch des Delay-Effekts ein konsistentes Klanggebilde («Weite, Fülle, Präzision») ausgeformt hat, das für die Sinnzuschreibungen an Delay-basierte Gitarren-Parts prägend war. Kontrastiert wird diese Fallanalyse durch Delay-Anwendungen aus dem Dub/Reggae-Bereich.
Mit Blick auf gegenwärtige Pop-Produktionen ist zu beobachten, dass das Gitarren-Delay zumeist mit einer deutlichen Referenz auf U2 verwendet wird, die fast schon imitative Züge trägt. Dies lässt sich u. a. mit dem formulaischen Charakter von Songs aus der frühen Schaffensphase der Band begründen. Abschliessend behandelt der Vortrag einzelne Anwendungen des Delays jenseits des Gitarrenspiels, um einen Einblick in die bereits bestehende und in der Zukunft sich (womöglich) weiter ausdifferenzierende Vielfalt des Delay-Effekts in der Popmusik zu geben.

Christofer Jost ist wissenschaftlicher Mitarbeiter am Zentrum für Populäre Kultur und Musik der Albert-Ludwigs-Universität Freiburg und Privatdozent am Seminar für Medienwissenschaft der Universität Basel. 2008 erfolgte seine Promotion an der Universität Mainz im Fach Musikpädagogik, 2011 habilitierte er sich an der Universität Basel im Fach Medienwissenschaft. 2013 vertrat eine Professur für Medien- und Kommunikationswissenschaft an der Universität Mannheim. Zu seinen Schwerpunkten in Forschung und Lehre gehören: Populäre Musik, Medienanalyse, Performance Studies und Qualitative Sozialforschung.

Christina M. Heinen (Oldenburg)
"Music of Black Holes and Sounds from Space". LIGO sonification and its Creative Side-Effects
In 2016 the Laser Interferometer Gravitational-Wave Observatory (LIGO) detected cosmic gravitational waves. Scientists used sonification processes to turn two black holes spinning around and smashing into each other into acoustic data. Soon, these sound phenomena were presented as astronomic acoustic proof and paraphrased as sounds from space, such as "Einstein's Unfinished Symphony", "Sounds from the Distant Universe", titles that mis-communicate the original scientific aims. Although most people know that what they are listening to is not physically "astronomic sound" or simply "the sound of black holes" these acoustic depictions and the prospect of listening to something from space is a popular idea which fires people's imaginations and inspires creativity, e.g. for musical remixes. The paper engages in these aesthetic side-effects by illustrating both the creative manipulation of LIGO sound data and the figurative discourses of "astronomic sound".

Christina M. Heinen is postdoctoral researcher in ethnomusicology at the University of Oldenburg. Between 2008 and 2012 she was associated member of the Georg-Simmel-Zentrum für Metropolenforschung in Berlin. In her dissertation she concentrated on urban spaces and improvised cultures. Besides, she designs cartoons and comics and produced several audio plays.

Christophe Fellay (Sion/London)
Rhythm and Noise
I propose to question the process that support the emergence of a style of music from the sound of the drumkit and its implementation within a drum beat. The proposal is to examine processes that could promote the emergence of new music styles from a historical perspective in which the drum beat often defines or is characteristic of specific music genres.
Throughout its history, the difficulty and the complexity inherent in the acoustic drumkit miking and recording pushed the subculture towards the development of new sounds by the use of low cost solutions, or by replacing the acoustic sounds by synthesized or digital sounds.
Therefore, the notions of noise and rhythm are at the heart of this creative process. "Strike a membrane with a stick, the ear fills with noise... Strike it a second time, a third, you've got rhythm".(Hart 1990:12) What's next in the history of noise and rhythm at the beginning of the third Millennium? How sounds and drum beats of the future will be designed, invented, perceived? For what audience(s)? What will be their rhythmic and sound flows? What influence will have on them the participatory art movements, the "big data" networks and algorithms?

Christophe Fellay is a sound artist, musician, composer and performer living in Switzerland. His work – music for classical and jazz ensembles as well as interdisciplinary works – has been performed internationally. His artistic area focuses on acoustics, architecture and interaction between human and machines. Christophe has a Master degree of Art in Music obtained at the Montreux Conservatory, Jazz Department and is currently working on a PhD research in music and performance at the Brunel University London. Apart from seminars and masterclasses London, Cambridge Edinburgh and Pretoria he teaches at the Ecole Cantonale d'Art du Valais – HES-SO ECAV sound department, where he is in charge of research.

Jan Herbst (Bielefeld)
Old sounds with new technologies? Examining the creative potential of guitar "profiling" technology from a production perspective
Every once in a while, innovations in music technology alter established practices of music-making and allow new means of expression. Yet, players of some instruments like the electric guitar have been quite disapproving of technological innovation, still favouring vintage guitars and valve amplifiers already available in the mid-20th century. As early as 1948, more modern transistor technology was introduced to guitar amplification, yet it was rejected for its weakness in producing distorted sounds. For better sound control, MIDI-supported modular rack systems with valve circuits became popular in the 1980s. From the 1990s on, digitalisation has slowly found its way into guitar technology but only recently the improved quality of modern modelling amplifiers and plugin simulations have begun to convince guitarists and music producers alike.
In 2011, a new "profiling" technology was announced with the release of the Kemper Profiling Amplifier, promising not only being able to modulate but to copy the exact sound and playing feel of valve amplifiers. It received much attention because it presented the prospect of combining the valued sounds of historical valve amplifiers with the benefits of digital technology. Hence, many professional guitar players and music producers have ventured the step towards profiling technology. A recent empirical study confirmed this new technology to be of high quality and unparalleled by any other digital technology. Moreover, ethnological data indicated that music producers see the benefit of profiling not just in the capability of copying sounds. Rather, changing a vintage amplifier into a high-gain device, shaping the signal's envelope without any natural counterpart, and combining and layering sounds of various preamplifiers, power amplifiers, cabinets and miking allows to create sounds unheard of before. This paper thus examines the creative possibilities of profiling technology from a production perspective by combining interviews with music producers with the researcher's own experience as a music professional.

Jan-Peter Herbst (Ph.D.) is a popular music scholar with a background as an electric guitarist and a music producer. His current research investigates the sound of the electric guitar with a special focus on distortion. Recent work addressed "heaviness" in rock and metal guitar riffs, guitar production styles, rock and metal music aesthetics, guitar players' attitudes and practices concerning their equipment, guitar virtuosity and the changing role of music producers and other professional roles in the recording industry.

Jack Davenport (Lancashire)
Playful Musical Interfaces. Introducing the "Sound of Colour"
As technology and digital platforms evolve, the ways in which musical materials are integrated and interfaced are also developing. This has led professional and commercial music production companies to redesign said interfaces in novel ways that do not resemble the traditional chromatic keyboard layout.
For the purpose of this paper, the authors have defined these interfaces into three categories; professional, semi-professional and playful, which are demonstrated through musical platforms such as the "Ableton Push" (professional), "ROLI Block" (semi-professional) and "YOOP" (playful). Each platform has its own unique elements of interaction that simplify the accessibility to musical composition, widening the demographic of users who are able to create and compose without necessarily having a traditional musical education.
This paper will discuss the development of a new interface called the "Sound Of Colour", an interactive installation built in Max/MSP. Through a combination of real time image detection and user movement, participants can control and compose music with the sounds of rare world instruments. The "Sound Of Colour" provides an interface away from traditional musical controllers or keyboards that allows participants to compose in an interactive and playful environment. It is the use of prime colours that allows the platform to monitor movements which are in turn mapped against a grid to control loops and audio samples.
Participants work collaboratively in an ensemble setting to produce a bespoke composition. The aim of this research project is to study the ways in which people interact with both physical hardware based controllers and sensory based interfaces in a musical composition environment.

Recently, **Jack Davenport** has begun his Doctoral Studies at the University of Central Lancashire. Following on from his work with the Global Sound Movement, Jack has a keen interest in recording instruments and building digital representations, which has led him to focus his further studies on "Designing Meaningful Sound Interfaces for Creative Participation". His research is based in presenting sounds in novel ways, thus conceptualizing the possibilities of truly opening up music making to everyone.

Werner Jauk (Graz)
Forward Back ... Sound-Gesture-Technologies. The Im-Mediate Bodily Shaping of Immaterial Sound & Sonic Pop-Culture
Based on theories of anthropology, evolutionary psychology and media and explored in scientific/artistic research in sonic media-art the talk focuses on sound-gesture shaping digital sound trying to bridge the gap, which came up with the media "notation", between instrumental and expressive behaviour: focusing on e-motion.
Immateriality of digital culture led to the transgression of the mechanistic paradigm, digital code freed sound-generation from any restrictions of physics and its structuring from embodied-cognitions emerging from physical body-environment-interactions; post-digital culture goes forward back to the needs of the body focusing on the hedonic value, the meaning of stimuli to the body.
Digital-sound in post-digital-music isn't orientated on physical-modelling and serial-processing but on psychological-modelling and structuring by "tension" – it's a paradigm for adoptive environments within a sonic culture for every-body without the aesthetic power of social-political distinction.

Mediamorphosis assumes that technological developments induce aesthetic and social changes – it's mainly psychological availability of "intuitive" technologies that leads to aesthetics of "new amateurism", crucial for popular-music.

Aesthetic behaviour, nothing but explorative behaviour, is seen as "playful" intentional body-environment-interaction reaching a homoeostatic level of "arousal". Pop-sound goes forward back to this basic mechanism of the communicational qualities of the hedonic body and makes it to be played by every-body.

While processing-technologies work on com-posing music by serial thinking in "mechanical" relations and its "sonification" by instrumental behaviour, technological bodily shaping of sound is "playing music" by the extension of the hedonic body in communication processes – this seems to be close to popular music, an im-mediate bodily expression being "amplified" by technologies (close to the body) of a (sonic) interaction-process with other bodies being collective and collectivizing.

The concept of sound-gesture, an imagination of motion and the expression of its e-motion by the hedonic body (overcoming the understanding of gesture as physical instrumental behaviour in smart industries) and immaterial digital sound lead to a concept of hedonic interaction beyond instrumental behaviour – its technological use by every-body in music and in creating (adoptive) living-virtualities is discussed within a concept of popular music as dominant part of post-digital body-music-culture.

Werner Jauk (*1953); musicologist/psychologist, scientific media-artist, electric guitarist, Professor at KF-University-Graz/Austria and head of "pop/music + media/art". He works on music as a role model for the (theory of) media arts. Studies in perception, cybernetics and experimental aesthetics, computermusic & jazz (KFUG, IRCAM, KUG) led him try to bridge a gap between science and arts: both follow epistemological interests working on adaptation of bodily life in dynamized and coded non-mechanistic realities and on interfaces to these virtual and mixed realities based on auditory logic and hedonistic behaviour formalized in pop/music - finally working on sound-gesture & sonic interaction since 1980.

Papers focusing these topics are published in international scientific journals – as a scientific artist he made adoptive "living" sonic communication-environments presented at the Biennale di Venezia (architettura e musica), Ars electronica, Transmediale, Cynet-art, Styrian Autumn, Art + Science/Beograd etc.

Fereydoun Pelarek (Sydney)
Sound Design Techniques of the Live Looping Performance Artist
Live looping has been part of the contemporary music scene for the past decade and a number of well–known musical artists have utilized this form of musical practice. However, live looping can be so much more than just part of an expressive delivery mechanism of music.

The popular DAW has evolved from a simple digital recording environment into an idiosyncratic, modular type music production system, with an almost endless amount of hardware and software controller possibilities. Within this type of a dedicated DAW system environment, live looping takes on the role of a powerful sound design/redesign tool both in the studio and live on stage.

It is the physical act of live looping within this DAW environment, which enables the artist to construct, shape and alter a number of musical loops into a new sound bite, or musical phrase, with relative ease and efficiency.

How we produce and shape new sounds may come down to how we approach compositional practices in parallel with new technology, ultimately influencing aspects of contemporary sound.
Live looping presents itself as one of those innovative approaches.

Originally born in Germany, **Fereydoun Pelarek** is an artist, composer, sound designer and audio engineer based in Sydney, Australia. He has produced work for theatre, dance and art installations, and is currently working on a solo album. Fereydoun holds a Masters of Design Science in Audio and Acoustics from the University of Sydney, and he is now undertaking a PhD at Macquarie University, examining compositional and performance techniques in the live looping environment.

Lippold Haken (Illinois)/Edmund Eagan (Ottawa)
Finger Control of Timbre throughout Each Note. Challenges for New Controllers and New Sound Generators
In recent years, the ideas of "Expressive Controllers" and "Expressive Midi" have been popularized, and many devices have hit the market. As a result, there is much confusion about the capabilities of "Expressive Controllers", and misguided expectations that "Expressive Controllers" are generic and interchangeable in the same way that Midi keyboards are generic and interchangeable. Often "Expressive Controllers" are based on inexpensive sensing technologies and conventional synthesis methods, and end up being little more than traditional Midi keyboards with a new way to pitch bend. Lippold Haken has been developing the Continuum Fingerboard since the 1980s, culminating in the Continuum Fingerboard with Light Action six years ago. This talk will discuss five key features of a Continuum Fingerboard with Light Action that set it apart from other "Expressive Controllers": temporal resolution, pressure sensitivity, attack (onset) fine structure, pitch sensitivity, and nontrivial mapping of finger actions to novel synthesis algorithms. Edmund Eagan will play live examples that highlight the issues presented.

Edmund Eagan is an audio manipulator extraordinaire, bringing over 30 years of professional experience to his work. This is backed by five years of university study in music composition at Ottawa and Toronto, Canada. During his career he has explored many varied musical genres, resulting in numerous award winning productions. As well as doing original music and sound design work, Edmund has participated in numerous audio recordings both as performer and producer, and has been extensively involved in the design and operation of a new innovative musical instrument, the Continuum Fingerboard, manufactured by Haken Audio.

Lippold Haken received a Ph.D. in Electrical Engineering from the University of Illinois and teaches nowadays at the University's ECE department. Lippold started working on the Continuum Fingerboard in the early 1980s when he was a student at the University of Illinois. He tried many different designs and many different finger detection technologies. It is challenging to polyphonically track the small finger movements involved in expressive playing, and at the same time have a good surface feel. The last decade has been especially exciting; he has been working with Canadian sound designer Edmund Eagan to develop built-in sounds that are specifically designed for the Continuum's three-dimensional playing surface.

Workshop Edmund Eagan/Lippold Haken
A New Paradigm for Timbre Control. Finger-Influenced Patching in the EaganMatrix
The EaganMatrix is the modular digital synthesizer internal to the Continuum Fingerboard. It provides finely crafted presets and complete custom programmability. The EaganMatrix is inspired by classic modular matrix patching synthesizers; it extends the classical approach to create a sophisticated finger-influenced matrix patching system. This workshop will introduce the basic concepts of the EaganMatrix and show how placing versatile formulas inside matrix patch points can create a detailed relationship between fingers on the Continuum Fingerboard surface and the flow of sound from patch point source to destination. Each three-dimensional performance direction of the Continuum playing surface can influence the final result of every single patch point. The workshop will include live demonstrations of patching and performance techniques, and encourage audience participation in sound design.

Wayne Marshall (Boston)
From Breakbeats to Fruity Loops. Small Sounds and Scenes in the Age of the DAW
In contrast to the aesthetics fostered by turntable practice in the 1970s and by the first generation of digital samplers in the 80s – both oriented toward vinyl-based repertories and familiar grooves – a more atomized approach to sample-based music has emerged over the last decade in the wake of widespread access to music software and broadband access to a global musical archive. The advent of the digital audio workstation (DAW), especially the virtual step-sequencer known as FL Studio (or Fruity Loops), has served to extend and intensify the sample-based practices of previous generations. This is especially audible in the establishment of new canons of cherished, iconic samples among certain circles of producers and of listening, dancing publics. A genre or musical public may now be based as much around a small set of samples – and their distinctive timbres – as, say, conventions of rhythm, tempo, harmony, or form. Notably, such samples can be surprisingly small as they speak volumes.
The resonant snares of reggaeton, the tamborzao toolkit of Brazilian funk, the "Ha" stab of the ballroom/vogue scene, the "Ice Rink" clink percolating through UK club music and beyond – and let's not forget the myriad emulations of practically every drum machine Roland produced in the 1980s – all of these serve as potent cultural dogwhistles, addressing musical publics and shared among private and public networks of producers. Today, musical publics gathered around all manner of popular (and obscure) electronic dance music are more likely to be hailed by a set of brief sonic signifiers than by looping breakbeats or well-worn melodies; the new instrument of choice, the DAW, looms as large over this ascendant approach as the turntable or the guitar did in their own heydays.
This atomized, "timbral" turn in musical production would thus seem to reiterate the familiar story of how profoundly an instrument can shape the sound of music through its particular affordances and constraints – even an instrument so seemingly "neutral" as an "empty" DAW. At the same time, we also bear witness to the ways musicians (and the listening/dancing publics implicated by their productions) inevitably use instruments according to particular cultural logics, political economies, and social contexts. This lecture will explore and examine some of these scenes and sounds, probing the implications for creativity and authorship, ownership and participation, repertory and community.

Wayne Marshall is an assistant professor of music history at Berklee College of Music and a visiting professor at Harvard University. An ethnomusicologist by training, his research examines the interplay between sound reproduction technologies, media regimes, and musical publics, with a focus on hip-hop's and reggae's intertwined, global histories. Published in a variety of scholarly journals reflecting the interdisciplinary nature of his work, Marshall co-edited *Reggaeton* (Duke 2009) and complements his academic work by sharing mashups and mixes online and writing for press outlets such as *Wax Poetics* and *The Wire* as well as on his critically acclaimed blog, *wayneandwax.*

Robin James (Charlotte)
Novelty, Speculation, Wake. How Pop Music Conceives of "the Future" (1983–2017)
When we talk about the "future sounds of pop music", what exactly do we mean by "the future"? In 1983, one of the first modern rock format radio stations dubbed itself "The Future of Rock n Roll"; in 2017, BBC Radio 1 DJ B.Traits introduces her show as "*le future*...forward-thinking underground dance music". In the 35 years between these two examples, it's not just the referent of "future" that has changed (from avant-rock to avant-EDM), but the underlying concept of "the future" itself. Between 1983 and 2017, neoliberalism (the view that everything, including traditionally non-economic phenomena like friendship, behaves like a deregulated, financialized market) ensconced itself at the core of Western politics at the same time, it replaced (post)modernist aesthetics. As Steven Shaviro argues, neoliberalism co-opts modernist transgression: "Business and marketing practices today are increasingly focused upon novelty and innovation [...]. Far from being subversive or oppositional, transgression is the actual motor of capitalist expansion today."[2] Roussloian futurist sonics are now the center of a capitalist realism that has foreclosed our ability to hear any future different than the present.[3] Neoliberalism shifts our concept of the future, replacing "newness" with cost/benefit speculation.[4] This is why the "we" of the white mainstream no longer think "alternatives" (capitalist realism) or hear anything but repurposed pasts (retromania). Instead, we hear *interests*, interests that can augment or diminish our human/aesthetic capital. Using Robin James's reading of neoliberalism in popular music, I track how this shift in the concept of the future manifests in popular music. Then, because Afrofuturism has always developed alternative concepts of the future, I consider how Christina Sharpe's concept of wake and aspiration work in African-American pop music to craft futures grounded in communal care rather than neoliberal speculation.

Robin James is Associate Professor of Philosophy at UNC Charlotte. She is author of two and a half books. *The Sonic Episteme. Acoustic Resonance & Post-Identity biopolitics* is under contract with Duke University Press. She also wrote *Resilience & Melancholy. Pop Music, Feminism, and Neoliberalism* (Zero, 2015) and *The Conjectural Body. Gender, Race and the Philosophy of Music* (Lexington, 2010). Her

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[2] Steven Shaviro: Accelerationist Aesthetics, in: e-flux 46 (Juni 2013), www.e-flux.com/journal/46/60070/accelerationist-aesthetics-necessary-inefficiency-in-times-of-real-subsumption
[3] See also Steve Godman: *Sonic Warfare,* Cambridge 2009.
[4] See Andrew Dilts: From Entrepreneur of the Self to Care of the Self, in: *Foucault Studies* 12 (October 2011) https://rauli.cbs.dk/index.php/foucault-studies/article/view/3338, and Thomas Lemke: Foucault, Governmentality, and Critique, in: *Rethinking Marxism* 14/3 (Fall 2002), pp. 49–64.

work on feminism, race, contemporary continental philosophy, pop music, and sound studies has appeared in *The New Inquiry, Noisey, SoundingOut!, Hypatia, differences, Contemporary Aesthetics,* and the *Journal of Popular Music Studies*.

Georgi Georgiev (Berlin)
The Future of Techno
Pop music has seized to exist in and of itself, having been fused with the underground. The author calls for reinvention of production methods and a paradigm shift in music consumption habits, a time to envision a new future. The paper scrutinizes the nostalgia trend which dominates contemporary electronic music and identifies the cultural and sociopolitical reasons which have led to the current unprecedented standstill characterizing it. It provides a perspective on the past and current states of electronic and pop music development, following its history and extracting valid notions of the possible future.

The essay follows the historical events beginning with the inception of electronic dance music in the early 80s and the fundamental role of sampling as a supreme and enduring production method. It recognizes every diverging sub-genre and surveys its path from an underground subculture to mainstream popular culture prominence, provides examples, and pinpoints correlating hardware and production peculiarities.

The text proceeds to analyze current trends on the hardware and software market, exposing new and dated technologies. In conjunction with that, it reveals the currently preferred production methods, providing background information as to why they have gained enduring popularity.

The essay draws parallels to the developments in popular culture outside of the boundaries of music, reaching back to the first years after WWII. It charts the events, which led to the emergence of the underground movements and subsequent development of the scenes of Detroit and Chicago, which gave birth to House and Techno, and traces the rise of electronic dance music to pop world domination.

In conclusion, the paper provides several perspectives on the current fascination with the past, providing explanations using the ideas inherent to Hegel's dialectic process and underlying zeitgeist complemented by notions on innovation expressed by Brian Eno, Jeff Mills and Nicolas Bourriaud. These are then juxtaposed to a historical run through the concepts of musical development as imposed by copyright law, supplemented by the idea of the functions of social memory in the modern age.

Georgi Tomov Georgiev is an audio-visual artist with strong ties to electronic music. He studied Communication Science at the University of Vienna and Sound Studies and Sonic arts at the Berlin University of the Arts. He led a radio show on the NY based online radio Frisky for 5 years and deejayed extensively in Berlin. He worked as a freelance editor for several independent labels and online dance music magazine Sonic Router. Other research papers include DJs and Web-Based Self-Promotion: The Transmedial Nature of Agenda Setting and Indeterminacy and Incompleteness in Sound Art.

Marie Thompson (Lincoln)
The (Feminized) Noise of Pop
This talk will consider the immanent, affective and inescapable noise of music – a source of "hidden delights" of sound and sensation. Where the noise of music has often been understood apropos histories of an academically-oriented avant-garde and narratives of transgression, line crossing and failure, here I turn my attention to the ubiquitous but often-dismissed noise of pop music. I examine the feminized connotations of noise in relation to pop's glitches, crackles and stutters, proposing that their dismissal is indebted, perhaps paradoxically, to masculinist histories of fidelity.

Marie Thompson is a lecturer in Media, Sound and Culture at the University of Lincoln. Her research examines the affective, material and gendered dimensions of sound, noise and music. She obtained her PhD in Musicology at Newcastle University and is the author of *Beyond Unwanted Sound. Noise, Affect and Aesthetic Moralism* (Bloomsbury, 2017) and the co-editor of *Sound, Music, Affect. Theorizing Sonic Experience* (Bloomsbury, 2013).

Hannes Liechti (Bern)
Rattling Chains and Cackling Chickens. Non-Musical Sampling in Experimental Electronic Pop
Today the cultural technique and production method of sampling has become a kind of *lingua franca* for producers in electronic music around the globe. Not least when creating new sounds, sampled sonic material often plays a central role. However beyond the genre of hip hop and issues of copyright, authorship, and originality, the production method remains understudied. It is especially a close look on the practices of sampling and the «musical and political goals» of samplists (Rodgers 2003) that is still missing and that could help to understand the origination of sounds.
This paper examines the sampling practices of a few artists from the network of NON Worldwide, a globally active avant-garde label and collective that has received considerable coverage in the music press over the past few years. These artists who have been labelled as «the new industrialists» elsewhere (Zevolli 2016) heavily sample in their tracks; among others a great amount of non-musical sounds such as rattling chains, gunshots, a Muezzin call, or cackling chickens. In this paper I want to examine what and why these artists sample; what function sampling takes up in these mostly instrumental tracks, and how it influences or determines the futuristic sounds of NON.

Hannes Liechti studied musicology and history in Bern and Munich. Currently he is a Ph.D. student at the University of Bern and the Bern University of the Arts. He attends the Graduate School of the Arts (GSA) in Bern and is a member of the core team of the network for local and global sounds and media culture Norient. In 2015 he co-published the second Norient book *Seismographic Sounds. Visions of a New World* and co-curated the corresponding exhibition on global pop.

Holger Lund (Ravensburg)
The Master's Master? Neue Soundästhetiken durch post-produktives Mastering und Vinylcut

Schon in *Über Popmusik* (2014) legte Diedrich Diederichsen den Akzent auf bestimmte irreguläre Soundqualitäten bei seiner Auffassung der Besonderheit von Popmusik als *recorded music*. In seiner neuesten Publikation *Körpertreffer* (2017) geht er noch konzentrierter diesem Phänomen prinzipiell unwillkürlicher, unplanbarer und daher Verlebendigung und Körperpräsenz schaffender Sounds nach, wie sie der mediale Produktions- und Reproduktionsapparat erlaube, ja in spezifischer und kennzeichnender Weise generiere.

Nun kann man den Körpern der Musizierenden (wie auch der Hörenden) auf verschiedene Weise Präsenz verschaffen. Aber eben auch dem Körper der Musik. Und das durchaus auf planvolle, geplante Weise. Seit ein paar Jahren ist in einigen Musikstilen wie Grime, Deep Dubstep, Trap, Future Bass und Drum & Bass aber auch der Sound Art der Versuch zu beobachten, Musik eine neue Körperlichkeit via Sound zu verschaffen, über Pitching, Bässe und Subbässe einerseits, über neue Klangräumlichkeiten andererseits. Musik wird geradezu (klang-)skulptural. Und diejenigen, die diese klangliche Hypotyposis neben den Musiker_innen besorgen, tauchen vermehrt nicht nur bei den Credits, sondern auch bei der Promotion auf: «mastered and cut by…» lautet hier die Formel, welche auf ein neues Musikbewusstsein schliessen lässt, bei dem die (zeitlich gesehen) letzten, post-produktiven Schritte plötzlich ganz weit vorne stehen (relevanzmässig).

Wer dachte, dass im Medium Vinyl klanglich alles bereits ausformuliert sei, könnte mit Veröffentlichungen beispielsweise von Overlook, Mumdance, Logos, Klein, Dillon, Raime/Yalla oder des Labels Silent Season zu der Auffassung gelangen, dass dem nicht so sei, vielmehr Wege zu neuen, quasi-haptischen sonischen Skulpturen oder sounddesignten, kinetischen Klanglandschaften eingeschlagen worden sind, bei denen, parallel zur fulminanten Aufwertung der Post-Produktion im Film, eine sehr deutliche Aufwertung der Post-Produktion in der Musik stattgefunden hat. Hier gilt es nun neu zu bestimmen, woher die Musik zu welchen Anteilen kommt: von den Musiker_innen, der Musiktechnik (Produktion) oder dem Mastering und Vinylcut (Post-Produktion)? Und: inwiefern lässt sich die Körperpräsenz von Musik kontrollieren und steuern?

Holger Lund arbeitet als Kunst- und Designwissenschaftler sowie als Kurator und DJ. 2008–2011 Vertretungsprofessur für Theorien der Gestaltung an der Hochschule Pforzheim, seit Ende 2011 Professor für Medienkunst an der DHBW Ravensburg. Seit 2004 leitet er zusammen mit Cornelia Lund die Medienkunstplattform fluctuating images (Berlin). Forschungsschwerpunkte sind Medienkunst, Designwissenschaft und Musikvisualisierung. Publikationen: *Audio.Visual – On Visual Music and Related Media* (2009) und *Design der Zukunft* (2014), beide zusammen mit Cornelia Lund, sowie *The New People. Musik als Seismograph* (2014). Zudem betreibt der das pop-historische Musiklabel «Global Pop First Wave».

Annie Goh (London)
Sounding Cyber*feminist Futures. Speculations on Sonic Unknowns

What can the legacies of cyber*feminism offer towards thinking about sonic futures? Cyber*feminist thought and action since the 1990s has demanded that the intersections of gender, race, class and ability be included in the often all-encompassing enthusiasm which dominates debates around technology. Crypton Future Media's hugely successful virtual pop star Hatsune Miku's character name

translates literally as "the first sound from the future." Taking Miku as an example, I will examine what tropes of its history as a vocaloid software combined with successful marketing strategies have led to its huge popularity. Miku as a vacant feminized technologized vessel in which the voice plays a central role has a history which can be traced back at least to the sexist science fiction of August Villiers de L'Isle-Adam's 1886 novel "The Future Eve".
Undeniably, technological innovations shape pop musical aesthetics, however my lecture aims to explore from a cyber*feminist position which tropes have transformed and which have, according to history, unfortunately remained the same in the larger ecologies of popular music. In line with a tradition of feminist speculative thought, I suggest that greater attention to the inequitable politics and economics of music technology production today will be vital in challenging notions of music technology in the future.

Annie Goh is an artist and researcher working primarily with sound, space, electronic media and generative processes within their social and cultural contexts. She holds an MA in Sound Studies, MFA in Generative Art and a BA (Hons) German & European Studies. She has recently published in *MAP – Media | Archive | Performance, n.paradoxa. feminist art journal, Flusseriana. An Intellectual Toolbox & Unsound/Undead* (forthcoming 2017). She has co-curated the discourse program of CTM Festival since 2013 and has lectured at Berlin University of Arts (Art and Media) and Humboldt University (Media Theory). She is currently undertaking a PhD at Goldsmiths University of London, Department of Media and Communications as a Stuart Hall PhD fellow and funded by CHASE/AHRC.

Ruben Brockhaus/Studygroup HTW Berlin (Berlin/Bern)
V:Age – Individualisierung von virtuellen Instrumenten durch Alterung
Physische Instrumente unterliegen bestimmten Alterungsprozessen, die sich nicht nur an der Oberfläche sondern auch im Inneren bemerkbar machen. Diese Prozesse sind meist mit der individuellen Nutzung eines Anwenders verknüpft und schaffen eine persönliche Beziehung zum Instrument. Darüber hinaus setzen sie kreative und innovative Prozesse in Gang.
Die aktuell grosse Anzahl an virtuellen Emulationen physischer Instrumente ermöglicht keine individuelle, auf Interaktivität basierende Beziehung zwischen Instrument und Benutzer. Damit bleibt für den Anwender das Gefühl, es mit einem uniformen Klangerzeuger zu tun zu haben. Deshalb soll auf der Basis eines experimentellen Settings der Prototyp eines einfachen virtuellen Synthesizers mit verschiedenen implementierten Alterungsprozessen entwickelt werden. Diese Alterungsprozesse werden auf verschiedenen Ebenen realisiert: haptische Abnutzung, Umwelteinflüsse, bauliche Abweichungen und technische Mängel.
Ein Prototyp, der sich an bestehenden prominenten Vorbildern orientiert, basiert auf einem analogen Synthesizer auf Basis der subtraktiven Synthese. Er ermöglicht die Erfahrung von virtuellen Alterungsprozessen auf den oben genannten Ebenen.
Kann die Individualität eines virtuellen Instrumentes/Klangerzeugers durch simulier-te Alterungsprozesse erhöht werden? Wie würde sich eine solche Individualisierung auswirken? Wie finden diese Alters- und Abnutzungsprozesse im Inneren und Äusseren eines virtuellen Instrumentes statt und was bewirken sie beim Anwender?

Ruben Brockhaus ist Game Design-Student an der HTW Berlin mit einem Fokus auf Virtual Reality und visuellen sowie auditiven Konzepten digitaler Umgebungen. Seine Schwerpunkte sind die Entwicklung und Umsetzung von innovativen und

interaktiven digitalen Anwendungen, Interfaces, Game Production Design, Raumwahrnehmung, Lighting und Postprocessing in VR. Als Mitglied im Forschungscluster Game Changer konnte er bereits Erfahrung in der Umsetzung von Projekten im wissenschaftlichen Kontext sammeln. Er arbeitet momentan an einem interdisziplinären Projekt zum Thema Sport in VR.

Marie-Kristin Meier (Berlin)
Immersion als ästhetische Strategie in Virtual Reality Experiences und elektronischer Musik
Im Herbst 2016 wurde mit *Björk Digital* im Londoner Somerset House erstmals eine Ausstellung präsentiert, die ästhetische Strategien einer Popmusikerin im Umgang mit Virtual Reality Technologie in den Mittelpunkt stellt. Björk beschreibt ihr Interesse an Virtueller Realität in den Möglichkeiten des *Worldbuildings*: «for a musician VR is so attractive because you have a closed alternate universe that you can make any way you want.»[5] Neben Björk entwickelten bereits Popmusiker wie Squarepusher oder The Weeknd künstlerische Virtual Reality Experiences. In ihren Produktionen entstehen Erlebnissituationen, in denen die Rezipient_innen den Klang- und Bildräumen nicht mehr gegenüberstehen, sondern in die Räume eintreten.
Der Medientheoretiker Oliver Grau beschreibt das Phänomen des Betretens von Illusionsräumen mit dem Begriff *Immersion*. Nach Grau wird in immersiven Situationen die kritische Distanz zum Gegenstand zugunsten einer emotionalen Beteiligung aufgehoben.[6] Immersion konstituiert Präsenz mit dem Ziel einer Maximierung von Realität, die eine Aufhebung des Trägermediums und des Aussen suggeriert.
Ästhetische Immersionsstrategien finden sich in Virtual Reality Experiences, aber auch im Bereich elektronischer Musik. Durch Mehrkanal-Lautsprechersysteme in Verbindung mit Raumklangsteuerungssoftware und Audiowiedergabeverfahren wie Wellenfeldsynthese lassen sich Illusionsräume kreieren, die von den Rezipient_innen betreten werden können. Anfangs waren Mehrkanal-Lautsprechersysteme nahezu ausschliesslich akademischer Forschungsgegenstand. Heute experimentieren zunehmend auch Popmusiker_innen mit Mehrkanal-Lautsprechersystemen und elektronischem Raumklang.
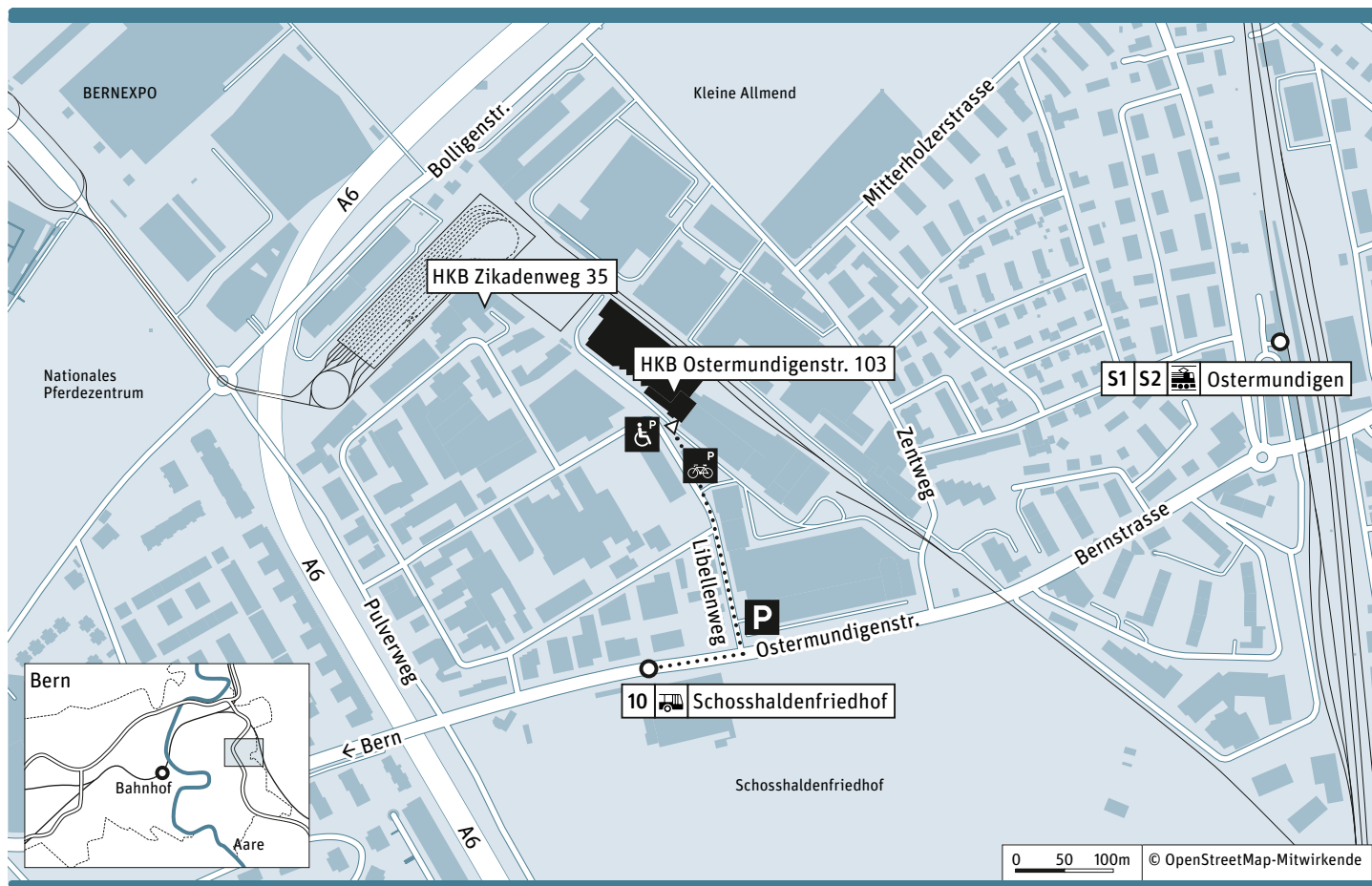In dem Vortrag soll zunächst der Begriff Immersion im Kontext von Musik und Sound verortet werden. Anschliessend sollen aus der aktuellen künstlerischen Praxis von Popmusiker_innen ästhetische Strategien in Virtual Reality Experiences und elektronischer Raummusik vorgestellt werden.

Marie-Kristin Meier studierte Systematische und Historische Musikwissenschaft an der Universität Hamburg. Sie war von 2014–2016 Künstlerisch-Wissenschaftliche Mitarbeiterin am Institut für Musik und Akustik des ZKM | Zentrum für Kunst und Medien. Parallel war sie Gastdozentin im Fachbereich Medienkunst an der Hochschule für Gestaltung Karlsruhe. Derzeit ist sie Programmkoordinatorin und Kuratorin des Programms «Immersion» der Berliner Festspiele und arbeitet parallel an ihrem Dissertationsvorhaben zum Thema Immersion im Kontext von Sound und Musik. Marie-Kristin Meier ist Mitgründerin des Vereins Institute for Sound & Music, dessen Ziel es ist, ein Museum für elektronische Musik und Klangkunst in Berlin zu gründen.

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[5] www.creativereview.co.uk/bjork-digital
[6] Oliver Grau: *Virtual Art. From Illusion to Immersion*, Cambridge u.a. 2003, S. 13.

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Ab Bahnhof Bern mit dem Bus 10 Richtung Ostermundigen Rüti bis Haltestelle Schosshaldenfriedhof fahren. Anschliessend in den Libellenweg abbiegen. Dem Strassenverlauf folgen, der Weg zum HKB-Gebäude ist signalisiert.

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