



more bing for  
your buck

an evening of 3d  
immersive sound  
and music  
diffused through  
the Stanford  
GRAIL

**Lopez-Lezcano**  
**Pampin**  
**Parmerud**

## PROGRAM

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**Space S[acred]ecular (2015)**  
2015 – 3d soundfield – 9:00

Fernando Lopez-Lezcano

**Grooves (2011)**  
2015 – 43 channels – 9:13

Åke Parmerud

**A Line (IDA) (2011)**  
2015 – 3d soundfield – 25:00

Juan Pampin

**Revoiced (2009)**  
2015 – 24 channels – 15:11

Åke Parmerud

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*The GRAIL is our "Giant Radial Array for Immersive Listening", the speaker array and diffusion and control environment which we have been using to present full 3D surround concerts since 2011. It has grown since then to span as many as 25 main speakers and 8 subwoofers, all digitally equalized for a transparent sonic experience that tries to be as close as possible to a studio environment. Close your eyes, open your ears (wide!) and let yourself be transported to places unheard...*

*Åke Parmerud and Juan Pampin visits and lectures in the Music 222 "Sound in Space" course are supported by generous funding from the Ben and A. Jess Shenson Funds at Stanford University.*

## PROGRAM NOTES

**Space S[acred]ecular] (2015)  
3d soundfield, 9'00"**

**Fernando Lopez-Lezcano**

Hagia Sophia in Istanbul, Turkey, was once a cathedral, a mosque and is now a secular museum. Its main dome rises up to a height of 182 ft and the building is one of the greatest surviving examples of Byzantine architecture. The [Icons of Sound](#) group at CCRMA, Stanford University together with the Arts and Art History Department at Stanford sought to recreate its acoustics digitally so that music created centuries ago for that space could be "heard" again as intended (at least virtually). The culmination of the project was a Stanford Live concert in the 2013 opening season of the Bing Concert Hall at Stanford ("From Constantinople to California"), in which the Cappella Romana singers, a group specializing in byzantine chanting, [performed live within a computer simulated 3D rendering of the Hagia Sophia acoustics](#), inside Bing itself.

This recreation of Hagia Sophia remains frozen in the digital domain, and was the foundation and inspiration for the creation of this piece over a week of very intense work in the ZKM Kubus (and subsequent refinements at Stanford). It was also the testing ground of a new [reverberation architecture](#) that enabled me to work completely in the Ambisonics domain, creating soundfields that are independent of the number and location of the rendering speakers. This 3D environment created a natural and very convincing recreation of this very large space, in which the reverberation supports and maintains the spatial information of the music rendered within it.

The interplay between the secular and sacred aspects of Hagia Sophia, and the precise tailoring of percussion and vocal sounds into musical form inside the simulated space created the rest.

The piece was rendered in full 3rd order Ambisonics using Free, Open Source software running in a Linux laptop, and was completely written in Scheme, using Bill Schottstaedt's CLM ([Common Lisp Music](#)) and its [s7](#) Scheme interpreter. The simulation of the acoustic environment was created in Ardour with various plugins.

I'm very grateful for the support of ZKM (Zentrum für Kunst und Medientechnologie, Karlsruhe, Germany), and specially to Ludger Brummer and Götz Dipper for what turned out to be a wonderful week composing sounds and structures in the 43 speaker Klangdome of the ZKM Kubus.

**Grooves (2011)**  
**43 channels, 9'13"**

**Åke Parmerud**

When my German friend Kai Hanekken proposed me to make a composition using vinyl sounds I was at first sceptical to the thought. Being used and abused in (especially) electronica in the mid 80-s and onward, it is by now a cliché par excellence and I felt it to be a rather pointless undertaking. However, thinking a little bit further two things struck me. First I realized that no composition (that I heard of) had really gone deep into the investigation and exploration of vinyl noises before, so that in fact it was a field of a certain virginity hiding therein. Secondly, just because of its obvious cliché status, it was perhaps worthwhile to see if I could somehow twist it in a new and original fashion.

When Kai then offered me to digitize all of the various vinyl noises from his large vinyl collection I could not resist the idea anymore. I would have access to a very large material that I would not be able to extract myself (not to mention that I probably would not have the time nor the energy) and when I finally had the chance to create it in the 43 channel Klangdome of ZKM the game was on.

It came out as the single most hardcore piece I ever did to this date. Rough, aggressive, dark and generally obnoxious but in a rather pleasant way (in my mind).

I wanted the piece to gradually get to the point of "the ultimate crackle" spreading the vinyl noise over the full frequency spectrum and in the full volume of space. This can of course only be made in a rather big multi channel sound system. Feel free to listen and like or dislike it but remember to play it LOUD!

Thanks to Kai for insisting and spending so much time with the records and to ZKM for support.

**A Line (IDA) (2011)**  
**3d soundfield, 25:00**

**Juan Pampin**

*A Line* was composed using field recordings from the city of Buenos Aires captured over the southern springs of 2009, 2010 and 2011. The title of the piece refers to subway line "A", the first subway of Buenos Aires (and of the southern hemisphere) which opened to the public in 1913 and until recently operated with its original wooden coaches. The title also refers to the line dividing the South and North parts of the city along which line "A" runs, and to the continuous narrative form of the piece.

As a child, I spent hours riding line "A" with my grandfather, always in its front coaches, next to the motorman, from where I could see the

signals and track changes, and listen to the sounds of the motor and of returning trains zooming by us. Going from the beginning to the end of the line, we would then transfer into the electric train that extends line "A" to the West into the suburbs of Buenos Aires.

Almost forty years after those early journeys, it has been fascinating to transfer this experience to my son Eloy, who quickly became a fan of line "A" (refusing to ride other than the front coach) and shared many rides with me while I was making field recordings for the piece. The form of *IDA* (one way) represents an imaginary trip through the city with him, in which recordings from places and events happening on the line (under and above the ground) were algorithmically edited and transformed to create a soundscape that attempts to capture the chaotic energy of this lively part of the city. Between sound documentary and stream-of-consciousness narrative, *A Line* is also a study on time in which the duration of a real subway ride encompasses three years of my son's life and several decades of my own urban sonic explorations.

**Revoiced (2009)**  
**24 channels, 15'11"**

**Åke Parmerud**

1. Consuming Polylogues
2. Carved in Solitude
3. Cermonial Circles
4. Cerebral Invokation

1992 I went around the world with a tape recorder and a microphone to collect the sound of the human voice from all over the planet. I made a composition called "Grains of Voices" with some but not all the voices I recorded. It was a huge mix where different voices from different places would blend together. Since then I felt that I wanted to give a chance to some of those voices that never made it into the composition. I also wanted to make a piece where each voice would act on it's own without blending with others. With the ZKM (Zentrum für Kunst und Medientechnologie) Gigahertz special prize I finally found both the opportunity and the perfect circumstances to create such a piece. "ReVoiced" is based on four different voices going from south to north of the planet. The first one being an aboriginal from Bathurst Island outside the north coast of Australia, the second a Russian woman singing a folk melody, the third a Katakali singer from New Dehli, India and finally a Nâjd (a kind of shaman) from Lapponia in the very north of Sweden chanting a so called jojk. All the sounds in each movement are based and derived exclusively from the voice of that very same movement. The only exception being the strong percussive sound in the end of the last movement. "ReVoiced" is specially composed for

the "Klangdome" of ZKM, a space specially constructed for a 3-dimensional projection of sound. The piece is using 43 loudspeakers in its original form.

The recording of Natalja (singing the Russian melody) was done by Howard Brookes. The Shaman was recorded by Per-Anders Hübner. Other recordings by myself.

## ABOUT THE ARTISTS

**Fernando Lopez-Lezcano** enjoys building things, fixing them when they don't work, and improving them even if they seem to work just fine. The scope of the word "things" is very wide, and includes computer hardware and software, controllers, music composition, performance and sound. His music blurs the line between technology and art, and is as much about form and sound processing, synthesis and spatialization, as about algorithms and custom software he writes for each piece. He has been working in multichannel sound and diffusion techniques for a long time, and can hack Linux for a living. At CCRMA, Stanford University since 1993, he combines his backgrounds in music (piano and composition), electronic engineering and programming with his love of teaching and music composition and performance. He discovered the intimate workings of sound while building his own analog synthesizers a very very long time ago, and even after more than 30 years, "El Dinosaurio" is still being used in live performances. He was the Edgar Varese Guest Professor at TU Berlin during the Summer of 2008. In 2014 he received the Marsh O'Neill Award For Exceptional and Enduring Support of Stanford University's Research Enterprise.

**Åke Parmerud** has successfully pursued a professional career in contemporary music and multi-media art since the late 70's. Although he originally trained as a photographer ( 1972-74 ) he went on to study music at university and subsequently the Göteborg Conservatory of Music. In addition to his electro-acoustic and instrumental music, his prolific list of works includes compositions covering a broad cross-section of modern experimental music in the fields of dance, film, interactive art, multi-media, theatre and video.

Åke's work has been acclaimed since his piece "Proximities" received first prize at the 1978 Bourges International Electroacoustic Music Festival in France. Since then he has received 17 international prizes and 3 major Swedish prizes (see [prizes and awards](#)). On two occasions he has also received the Swedish "grammy" award for Best Classical Album of the Year and his music has represented Swedish Radio twice at The Prix Italia.

He is regularly commissioned to compose works by important international institutions and his works have been presented worldwide. In 1997 his piece "Grains of Voices" was performed at the U.N in New York on United Nations Day. His music has been released on numerous albums and compilations, and in 1998 he became a member of The Swedish Royal Academy of Music.

Åke Parmerud is not just a composer he is also a stage performer, playing electro-acoustic concerts using many different types of interactive instruments - often solo. He has toured extensively in Europe, North and South America. In the late 80's he teamed-up with composer Anders Blomqvist, and their live performances - which included fireworks - were successful all round Europe well into the 90's.

The last ten years have seen Åke working as an innovative sound and

software designer for interactive audio/visual installations. His own works "The Fire Inside", "The Living Room" and "Lost Angel" have been shown in Berlin, Göteborg, Leon, Mexico City, Paris and Reykavic. He has also designed concerts and been artistic director for large audio/visual events both indoors and outdoors.

Åke's artistic reputation has led to several creative international collaborations. Between 1999 and 2006 he worked closely with the Danish "art team" [Boxiganga](#), developing revolutionary interactive video installations plus exploring telematic concepts and interactive solutions for live performances. In 2000, 2001 and 2002 he also worked with Canadian choreographer [Pierre-Paul Savoie](#) as composer, sound and software designer.

His most recent stage work "Metamorphos" was developed together with Canadian dance choreographer [Mireille Leblanc](#) who also choreographed the interactive sound/video-installation "Lost Angel" and the prize winning dance performance "The Seventh Sense".

He recently formed [AudioTecture](#) with Olle Niklasson. This is a company specialising in acoustic interior design for diverse environments from private houses to public spaces.

He is also a member of an international multi-media/multi-disciplinary arts organisation: [Celestial Mekaniks](#).

**Juan Pampin** is Associate Professor of Music Composition at University of Washington, Seattle, and founding faculty member of the Center for Digital Arts and Experimental Media (DXARTS), for which he currently serves as Director. He graduated from Conservatoire National Supérieur de Musique de Lyon, France, where he studied with Philippe Manoury and Denis Lorrain. He got a DMA from Stanford University where he studied composition with Jonathan Harvey and computer music at the Center for Computer Research in Music and Acoustics (CCRMA).

Juan Pampin's works explore the territory delineated by the concepts of site, memory, and materiality through the use of algorithmic strategies to produce aural phenomena. His music compositions, including pieces for instrumental, digital, and mixed media, have been performed around the world by world-class soloists and ensembles such as Susana Kaskoff, Garth Knox, JACK quartet, Percussions de Strasbourg, Krakow Percussion Ensemble, to name just a few. His work "On Space" –for percussion sextet and 3D electronic sounds– has been recently released on CD as part of Les Percussions de Strasbourg 50th anniversary historical edition box published by Universal France.

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No food, drink or smoking is permitted in the building.  
Cameras and other recording equipment are prohibited.  
Please ensure that your pager, cellular phone and watch alarm are turned off.  
<http://ccrma.stanford.edu/concerts/>

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