

## Linguistic Margins/Visual Atolls 16: An Audiovisual Performance Suite

William Hsu

Department of Computer Science  
San Francisco State University  
San Francisco CA 94132, USA  
whsu@sfsu.edu

**Abstract.** We will present an interactive audiovisual performance with John Butcher (saxophones), and real-time animations/sound by Bill Hsu. The suite comprises two sections, each of length 10 minutes, for a total of 20 minutes.

**Keywords:** interactive audiovisual performance, improvisation, generative systems, physics-based simulations

### Introduction

*Linguistic Margins/Visual Atolls 16 (after Gunter Brus)* is the latest instalment in my series of audiovisual improvisations. Earlier pieces from the series have been performed at SMC 2009, NIME 2011, Steim (May 2010), ZKM (June 2011), NIME 2012, NIME 2013, xCoAx 2014, and other venues.

### Description

*Linguistic Margins/Visual Atolls 16* is a suite of structured audiovisual improvisations for two to four performers, utilizing live electronic and acoustic sound, and interactive animations. Video is projected on stage, above/behind the performers. The version for ICLI 2016 comprises two distinct 10-minute sections.

The visual component of each section is a complex abstract animation environment, based on a generative system or physics-based simulation. In performance, two or more channels of audio enter the software system from microphones or the venue's sound system. The audio is analysed, and descriptors are sent to an animation environment. Each interactive animation system is influenced by the real-time audio descriptors from the musicians' performance, and by physical gestures from controllers. The animations are visible to the musicians and influence their performance, thus forming a feedback loop. Each section has both components that I control, and autonomous components with their own behavioral rules. Hence, each performance involves ongoing negotiation between the controllable components and the autonomous modules.

For ICLI 2016, we will incorporate two sections/pieces, each of duration 10 minutes, selected from our series: *Folly (Celestial)*, a 3D model inspired by celestial bodies and astrophysical phenomena, and *Fugue State*, a "polyphonic" visual fugue utilizing physics-based virtual materials. The performers will be Bill Hsu (interactive animations and sound), and London-based saxophonist John Butcher. None of these sections has been performed outside the San Francisco Bay area.

Bill Hsu and John Butcher, along with Californian percussionist Gino Robair, form the core of the audiovisual trio *Phospheme*. Earlier pieces in the *Linguistic Margins* series were developed for our residency and concert at ZKM in 2011. The full series comprises over a dozen distinct audiovisual pieces/systems, some with numerous variants. Musicians who have participated in performances of these pieces include Kyle Bruckmann, Chris Burns, James Fei, Jacob Felix Heule, Guro Moe, Havard Skaset, Birgit Ulher, and many others. A paper describing the design and implementation of the software system will be presented at this conference.

## Selected video excerpts

Live (with James Fei and Gino Robair) at Outsound Summit Festival, August 1, 2015 (*Folly (Celestial)* starts at 8:00, *Fugue State* at 17:00):

<https://www.youtube.com/watch?v=NLfj26zfqsI>

Fluke demo: <https://vimeo.com/106125702>

Trailer for *Phospheme* trio: <https://vimeo.com/38317811>

## Biographies

**Bill Hsu** is an Associate Professor of Computer Science at San Francisco State University. He has performed in the US, Asia, Europe, and Australia, including NIME 2007, 2011, 2012, 2013, xCoAx 2014, Blurred Edges Festival 2014 (Hamburg), San Francisco Electronic Music Festival 2013, Sonic Circuits Festival 2013 (Washington DC), ACM Creativity and Cognition 2013, Music Metacreation Weekend 2013, Festival art::archive:architectures (ZKM, Karlsruhe, 2011), SMC 2009 (Porto), Harvestworks Festival 2009 (New York), Fete Quaqua 2008 (London), MIX Festival 2007 and 2009 (New York), NIME 2007 (New York), and Stimme+ 2006 (ZKM, Karlsruhe).

**John Butcher** was born in Brighton and lives in London. His music ranges through improvisation, his own compositions, multitracked pieces and explorations with feedback and unusual acoustics.

Originally a theoretical physicist, he left academia for music after publishing a Ph.D. in 1982. He has since collaborated with hundreds of musicians, mostly involved with improvisation – including Derek Bailey, Rhodri Davies, Andy Moor (EX), Phil Minton, Christian Marclay, John Stevens' SME, Gino Robair, Polwechsel, Mark Sanders, AMM, John Russell, John Tilbury, Okkyung Lee, Eddie Prevost and Gerry Hemingway.

Compositions include "Penny Wands" for Futurist Intonarumori, two HCMF commissions, two saxophone 4-tets and "Good Liquor Caused my Heart for to Sing" for the London Sinfonietta. "Tarab Cuts", a response to recordings of early Arabic classical music, was shortlisted for a 2014 British Composer's Award. In 2011 he received a Paul Hamlyn Foundation Artists Award.

Alongside long term collaborations he values playing in occasional encounters; from large groups such as the EX Orchestra & Butch Morris' "London Skyscraper", to duo concerts with Fred Frith, Akio Suzuki, Paal Nilssen-Love, Peter Evans, David Toop, Otomo Yoshihide, Tim Hodgkinson and Matthew Shipp.

Butcher is also well known as a solo saxophonist who attempts to engage with a sense of place. The well received "Resonant Spaces" CD is a collection of site-specific performances recorded during a tour of unusual locations in Scotland and the Orkney Islands.

## Selected Bibliography

Hsu, William. 2010. "Strategies for Managing Timbre and Interaction in Automatic Improvisation Systems," *Leonardo Music Journal*, 2010.

Hsu, William. 2009. "Some Thoughts on Visualizing Improvisations / Improvising Visualizations," Inspirational session on "Visualisation of music," 6th Sound and Music Computing Conference, July 2009, Porto, Portugal.

Hsu, William and Sosnick, Marc. 2009. "Evaluating Interactive Music Systems: An HCI Approach," Proceedings of International Conference on New Interfaces for Musical Expression, June 2009, Pittsburgh PA