

# PENCIL FIELDS

## Performance proposal for NIME2012

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A live performance of 10-15 minutes by Palle Dahlstedt on a custom built instrument, using a simple pencil drawing as a gestural interface for controlling complex analog synthesis (on a Bugbrand Modular). The instrument works by creating a voltage potential field in the graphite/pencil markings on the paper using custom movable electrodes made from coins. Then, control voltages are extracted from other points on the paper, controlling various aspects of the synthesized sound

I have also submitted a paper describing this novel interface in detail. Here is the abstract from the paper, describing the system in short:

*I present a novel low-tech multidimensional gestural controller, based on the resistive properties of a 2D field of pencil markings on paper. A set of movable electrodes (plus, minus, ground), made from soldered stacks of coins, create a dynamic voltage potential field in the carbon layer, and another set of movable electrodes tap voltages from this field. These voltages are used to control complex sound engines in an analogue modular synthesizer. Both the voltage field and the tap electrodes can be moved freely. The design was inspired by previous research in complex mappings for advanced digital instruments, and provide a similarly dynamic playing environment for analogue synthesis. The interface is cheap to build, and provide flexible control over a large set of parameters. It is musically satisfying to play, and allow for a wide range of playing techniques, from wild exploration to subtle expressions. I also present an extensive inventory of the available playing techniques, motivated by the instrument, musically, conceptually and theatrically. The performance aspects of the interface are also discussed. The interface has been used in a number of performances in Sweden and Japan in 2011, and is also used by other musicians.*

### *Documentation*

I have performed with this instrument 6 times, 3 in Sweden and 3 in Japan, in various contexts, most often as a solo performer. Links to online video of two of these live performances:

The first example (<http://youtu.be/CyXByRR6I-w>) shows one of the very first performances, a headphone concert at the Gothenburg Art Sounds Festival, May 6th, 2011. It is a live recording of the whole performance (ca. 12 minutes), but the audience is not visible in the video. There are about 35 people with headphones, sitting and standing around me in a close circle. The beginning is slow, since some preparation is included in the video (e.g., drawing of the actual interface)

The second video example (<http://vimeo.com/31173998>) shows the beginning of a performance at the opening of the Varia Improvisation Festival in Gothenburg, Sweden, Oct 26th, 2011. In addition to these performances, the interface was used in performances in Tokyo and Kyoto in 2011, both solo and together with other musicians.

Short bio:

Palle Dahlstedt, PhD, MA, MFA (b. 1971 in Sweden)

Palle Dahlstedt, composer, improviser and researcher from Stockholm, since 1994 living in Göteborg, Sweden. With composition degrees from the Academies of Malmö and Göteborg, he is currently the main lecturer in electronic music composition at the Academy of Music and Drama, University of Gothenburg, and artistic director of the the Lindblad Studios. Also, he is Docent/Associate professor in computer-aided creativity, performing extensive research in novel performance and improvisation techniques for electronic music, and in computer models of artistic creative processes. In 2011, he received the largest artistic research grant ever awarded in Sweden (€570.000) for his Creative Performance project. Since 1990, he has been interested in Japanese traditional arts and music, and Noh in particular, and he has collaborated extensively with Japanese actors, dancers and musicians. He is also active as improvising pianist.

### *Technical data about the performance*

Duration: 10-15 minutes

The performance only involves myself, and I will bring all necessary equipment, *except*:

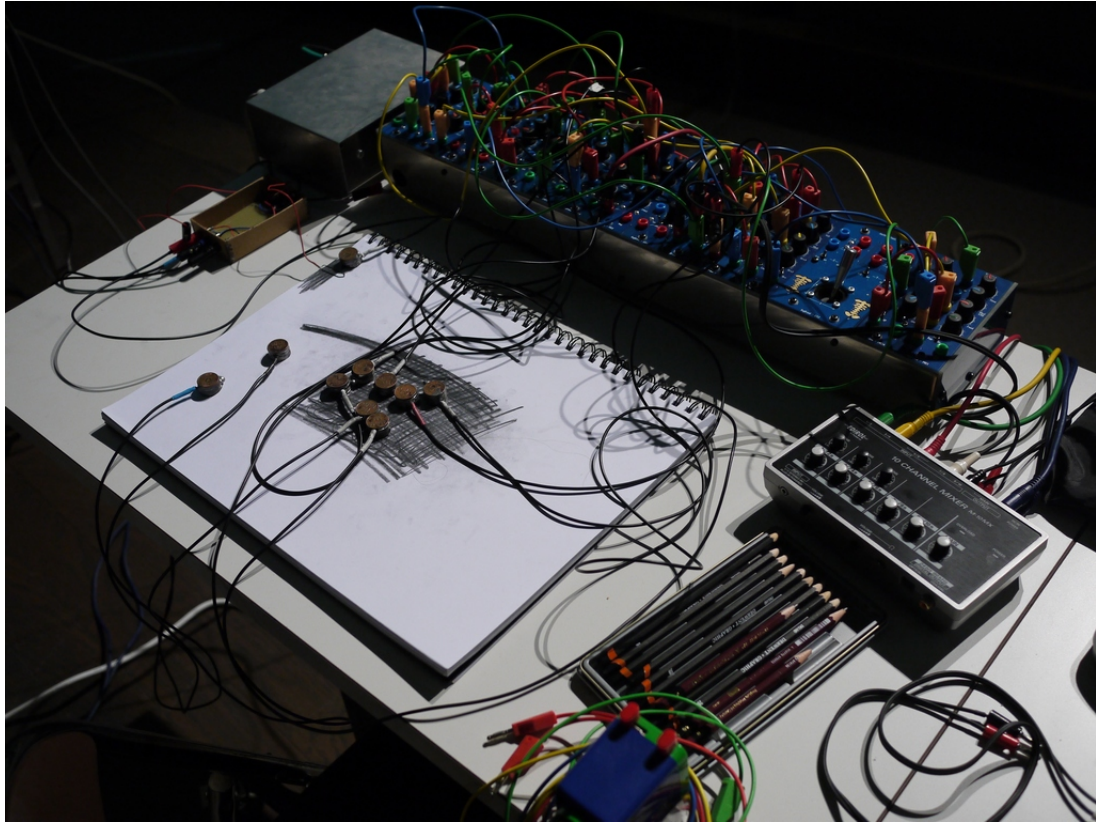
*A table, a chair and some electricity*

*A video camera on a tripod, connected to...*

*A video projector with a large projection screen located behind me on the stage*

*A two-channel speaker system of decent quality*

Since the interface is quite interesting, visually, the audience should be able to see clearly. Hence, the projection.



The setup from a performance at Japan Society of Sonic Arts, Tokyo Metropolitan Univ., Sept. 2011



From a performance in Kyoto, October 2011