



The Sensor Augmented Bass Clarinet Research (SABRe) project aims to embed different sensing technologies into a standard bass clarinet that can be used simultaneously as an acoustic instrument and a control device for computer music.

The controller part of SABRe is divided into four sensing modules and a data collecting and transmission unit:

- Keys sensors are made of permanent magnets and hall effect sensors. They are put on each key of the instrument and provide an exact image of the clarinet fingering sequences at any playing speed.
- Thumb switches are simple binary switches used for triggering commands. They are placed under the left thumb keys allowing operation while keeping the thumb keys pressed.
- Movement sensors deliver an image of the absolute position and the movements of the instrument.
- An air pressure sensor is placed in the mouthpiece, as close as possible from the lips in order to get a value of the static pressure used to produce a sound.
- The data unit collects all the sensors information, packs it into defined frames and sends it via radio to the control computer.

#### Organisation:

- Matthias Müller
- Sébastien Schiesser
- Germán Toro Pérez

In collaboration with the Swiss Clarinet Society  
<http://www.clarinetociety.ch/> and the ISCM Zurich.

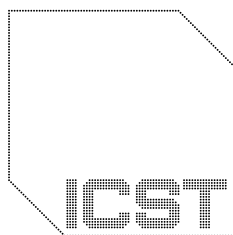
Further information:  
[www.icst.net/research/projects/sabre](http://www.icst.net/research/projects/sabre)



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SWISS NATIONAL SCIENCE FOUNDATION



Zürcher Hochschule der Künste  
Zurich University of the Arts



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## 1. Bass Clarinet Symposium

# SABRe

Sensor Augmented Bass Clarinet Research

## February 3 - 4, 2011

ZHdK Zurich University of the Arts / Music Department  
Florhofgasse 6, 8001 Zurich  
Kleiner Saal

#### Invited bass clarinet players:

- Alain Billard, France
- Henri Bok, Netherlands
- Ogyz Büyükberber, Turkey
- Laura Carmichael, Netherlands
- Volker Hemken, Germany
- Heinz-Peter Linshalm, Austria
- Michael Löwenstern, USA
- Eric Mandat, USA
- Ernesto Molinari, Switzerland
- Rocco Parisi, Italy
- Alex Sramek, USA
- Petra Stump, Austria
- Stephan Vermeersch, Belgium

#### Guest lecturers / panel discussion participants / performers:

- Franziska Baumann
- Heiri Baumgartner
- Jean-François Bescond
- Loïc Charrière
- Cathy van Eck
- Michael Harenberg
- Nadia Löffel
- Maria Rapp
- Jérôme Selmer
- Bruno Spoerri
- Martin Suter
- Lukas Vogelsang

#### Invited institute:

- STEIM, Netherlands

#### SABRe team:

- Cyrill Lim
- Matthias Müller
- Katharina Rosenberger
- Marcel Saegesser
- Jan Schacher
- Sébastien Schiesser
- Germán Toro Pérez

**Institute for Computer Music  
and Sound Technology**

## Thursday, February 3, 2011

- 9.30 Welcome  
Michael Eidenbenz  
(Director Music Department ZHdK)  
Germán Toro Pérez (Director ICST)  
Matthias Müller
- 10.00 Presentation of SABRe  
Matthias Müller / Sébastien Schiesser
- 11.00 Discussion 1 – Performance and live electronics  
Jan Schacher / Robert van Heuman /  
Franziska Baumann  
Moderation: Matthias Müller
- 12.00 Lunch
- 13.30 Lecture recital 1 – Laura Carmichael  
“Body gesture as a musical gesture generator:  
a potential theatrical music application of  
sensor technology”
- 14.30 Discussion 2 – The bass clarinet and accessories.  
Problems and developments  
Jérôme Selmer / Jean-François Bescond /  
Martin Suter  
Moderation: Matthias Müller
- 15.30 Lecture recital 2 – Petra Stump /  
Heinz-Peter Linshalm / Volker Hemken
- 16.15 Coffee break
- 16.45 Lecture recital 4 – Henri Bok
- 17.30 Lecture recital 3 – Ernesto Molinari /  
Michael Harenberg
- 

*Concerts at Cabaret Voltaire,  
Spiegelgasse 1, 8001 Zurich, [www.cabaretvoltaire.ch](http://www.cabaretvoltaire.ch)*

20.30 Concert Ogyz Büyükberber / Robert van Heuman

22.00 Concert Michael Löwenstern

*Jam session*

## Friday, February 4, 2011

- 9.30 Lecture recital 5 – Alex Sramek
- 10.30 Discussion 3 – Pedagogic aspects  
Lukas Vogelsang / Heiri Baumgartner / Nadia Löffel /  
Loïc Charrière  
Moderation: Maria Rapp
- 11.30 Lecture recital 6 – Stephan Vermeersch / Rocco Parisi
- 14.30 Lecture recital 7 – Eric Mandat
- 15.30 Discussion 4 – Composition and live electronics  
Cathy van Eck / Katharina Rosenberger /  
Bruno Spoerri  
Moderation: Germán Toro Pérez
- 16.30 Coffee break
- 17.30 Lecture recital 8 – Alain Billard
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- 19.30 *Final concert at  
ZHdK, Florhofgasse 6, 8001 Zurich*
- Alain Billard, Henri Bok, Ogyz Büyükberber, Laura Carmichael, Volker Hemken, Heinz-Peter Linshalm, Michael Löwenstern, Eric Mandat, Ernesto Molinari, Rocco Parisi, Alex Sramek, Petra Stump, Stephan Vermeersch