

# Updates of the WONDER software interface for using Wave Field Synthesis

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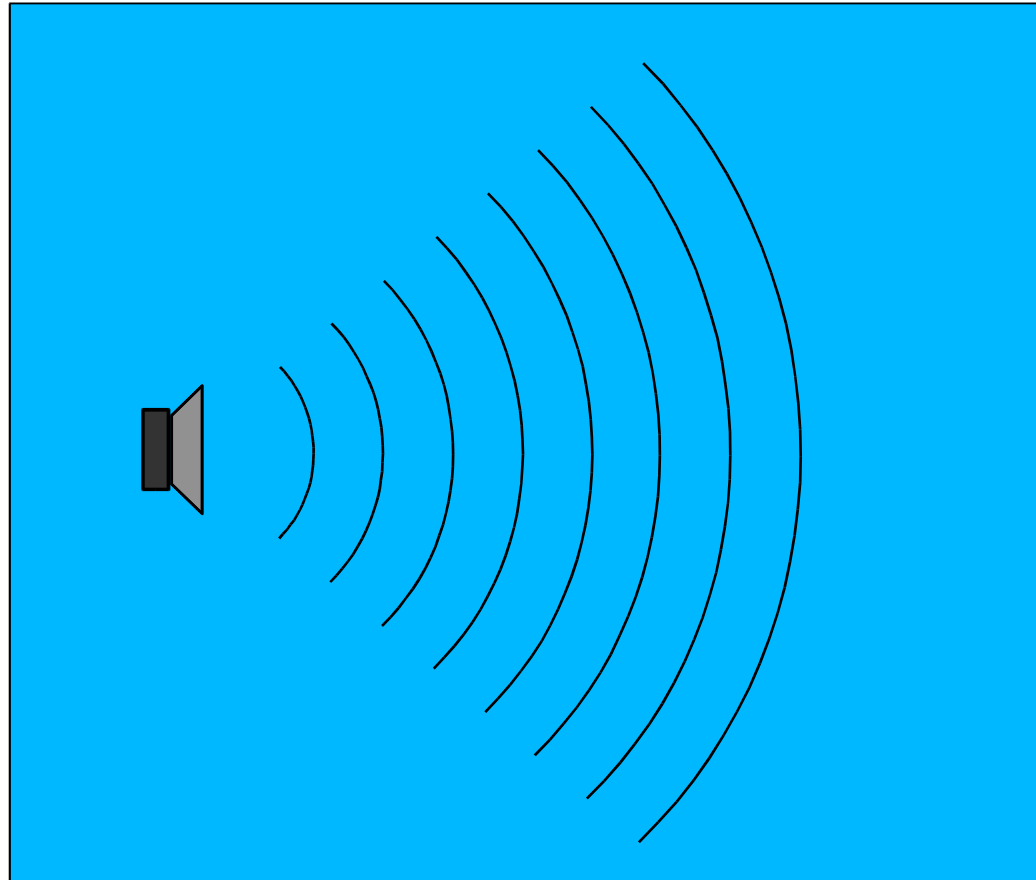




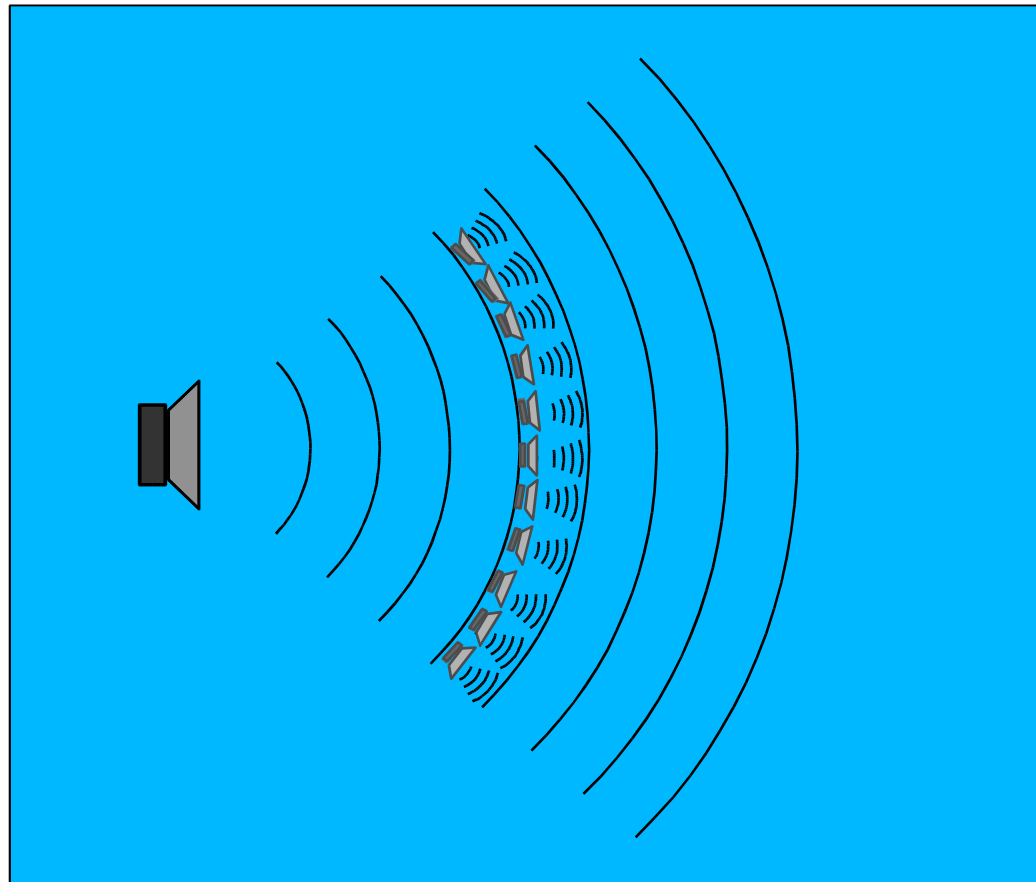
# Overview

- What is Wave Field Synthesis?
- Overview of WONDER
- Updates since last year
- Demonstration of WONDER
- Conclusions & future work

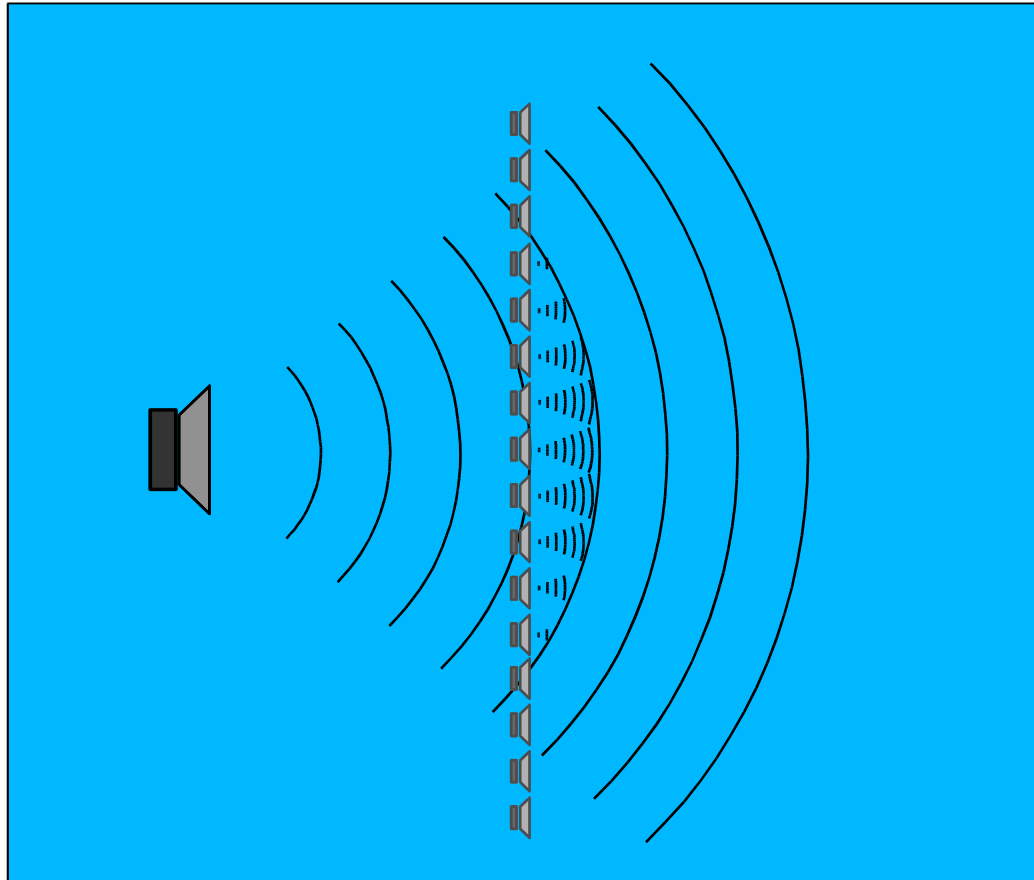
# Huygens



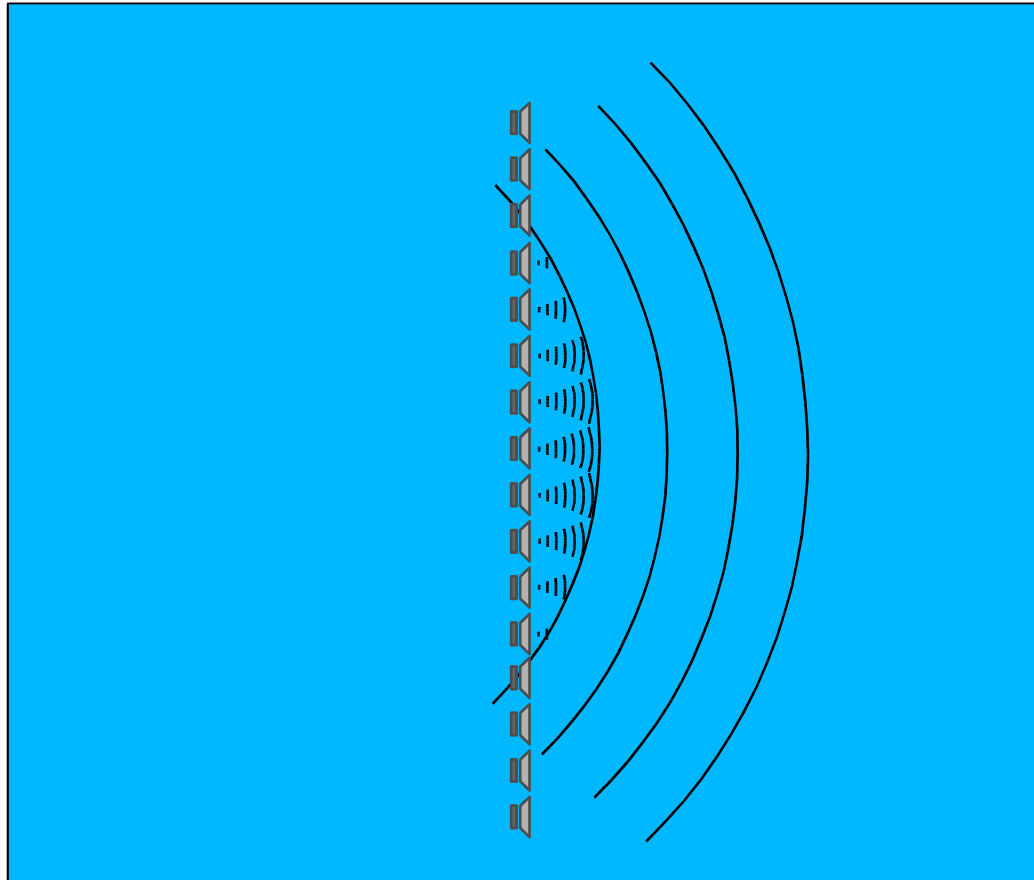
# Huygens



# Wave Field Synthesis



# Wave Field Synthesis





# WONDER

- A graphical user interface to use Wave Field Synthesis
- Three main tools: grid definition, composition and play interface
- Additional tools to manipulate and view data
- Play interface controllable via Open Sound Control



# Updates to WONDER

- Cosmetic improvements
- More modular programming
- New tools
- Improved communication with BruteFIR
- Logview
- Browsable help-documentation

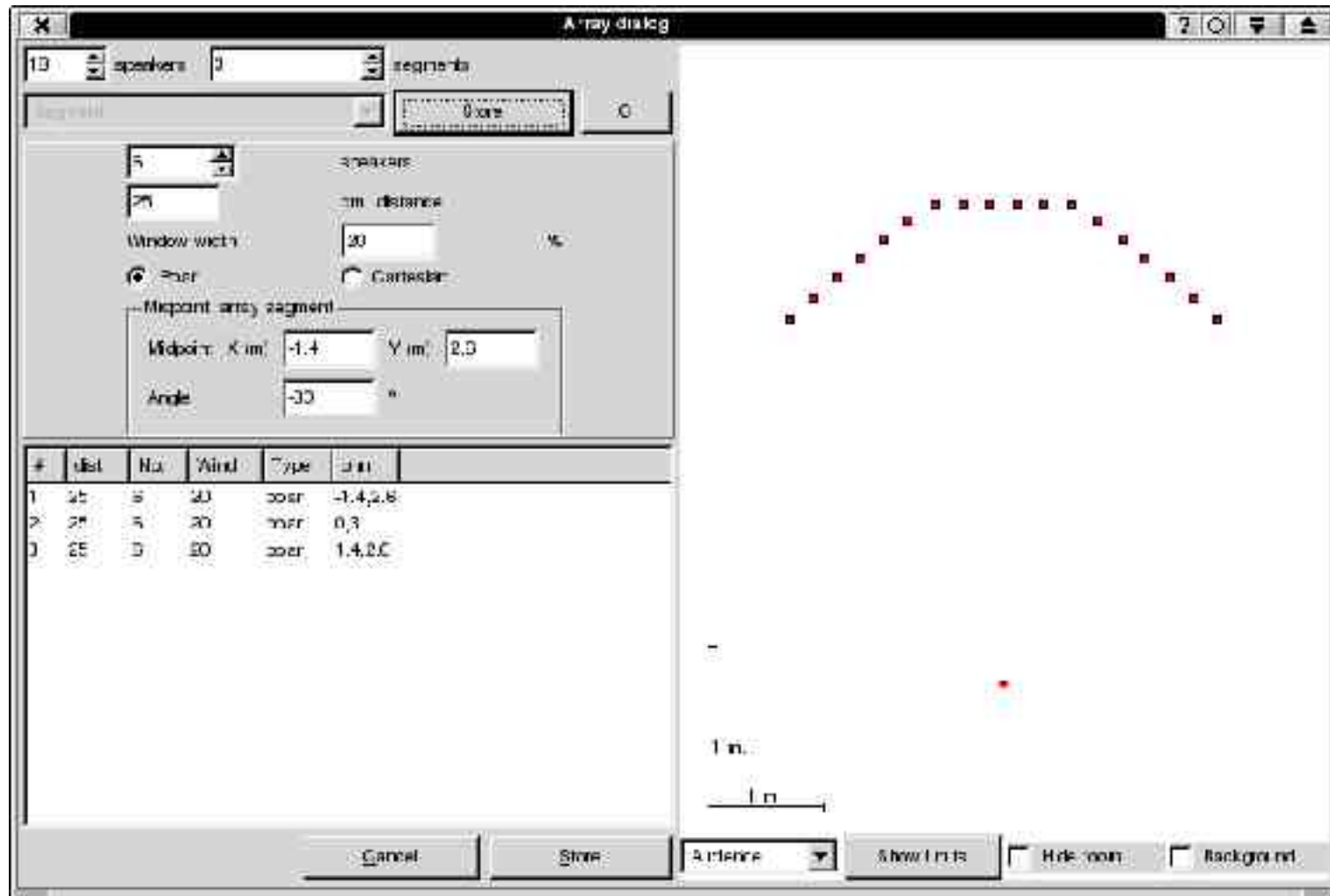




# Demonstration

- Array definition
- Grid definition
- Filter view
- Composition
- Score view
- Play control

# Array definition





### Define Grid

1 m 1 m

3.307.25

Segment

Flat  Floor

High frequency damping

Reflections

x1 (m) -2.700 y1(m) 0.700  
x2 (m) 2.700 y2(m) 7.500

Cylindrical  Rect

dx (m) 0.500  
dy (m) 0.500

Flat  Partition

-rectangle

Slope

Room

Wall	Location	Absorption
Front	-2.000	70.00
Back	8.000	20.00
Left	2.500	10.00
Right	0.500	60.00

Order: 0  Draw

Room 1

Filter Settings

Text file

Lock size

SampleRate: 44100

Grid/Kernel

Reset  Load

Calculate  Save

Files  Draw

Calculate Room

Show grid and files

Layer	Type	x1	x2	y1	y2	cr	ds,db	d	ds,br	vol
0	rec.	-2.70	0.70	2.70	7.50	c	0.50		0.50	
Room	rec.	-3.50	-2.00	3.50	8.00	c	0.50		0.50	

Default: 0 rec. c 0.50 0.50

Speaker positions: | (1.0410, 2.1597) | (1.7676, 2.1128) | (1.6858, 2.6076) | (1.2173, 2.6528) | (1.0767, 2.7476) | (0.8888, 2.7128) | (0.6250, 2.6375) | (-0.1250, 2.7250) | (-0.3750, 2.6250) | (-0.3597, 2.9250) | (-0.7524, 2.7875) | (-0.2517, 2.0225) | (-1.5025, 2.5375) | (1.7576, 2.4125) | (-1.4427, 2.3675) |

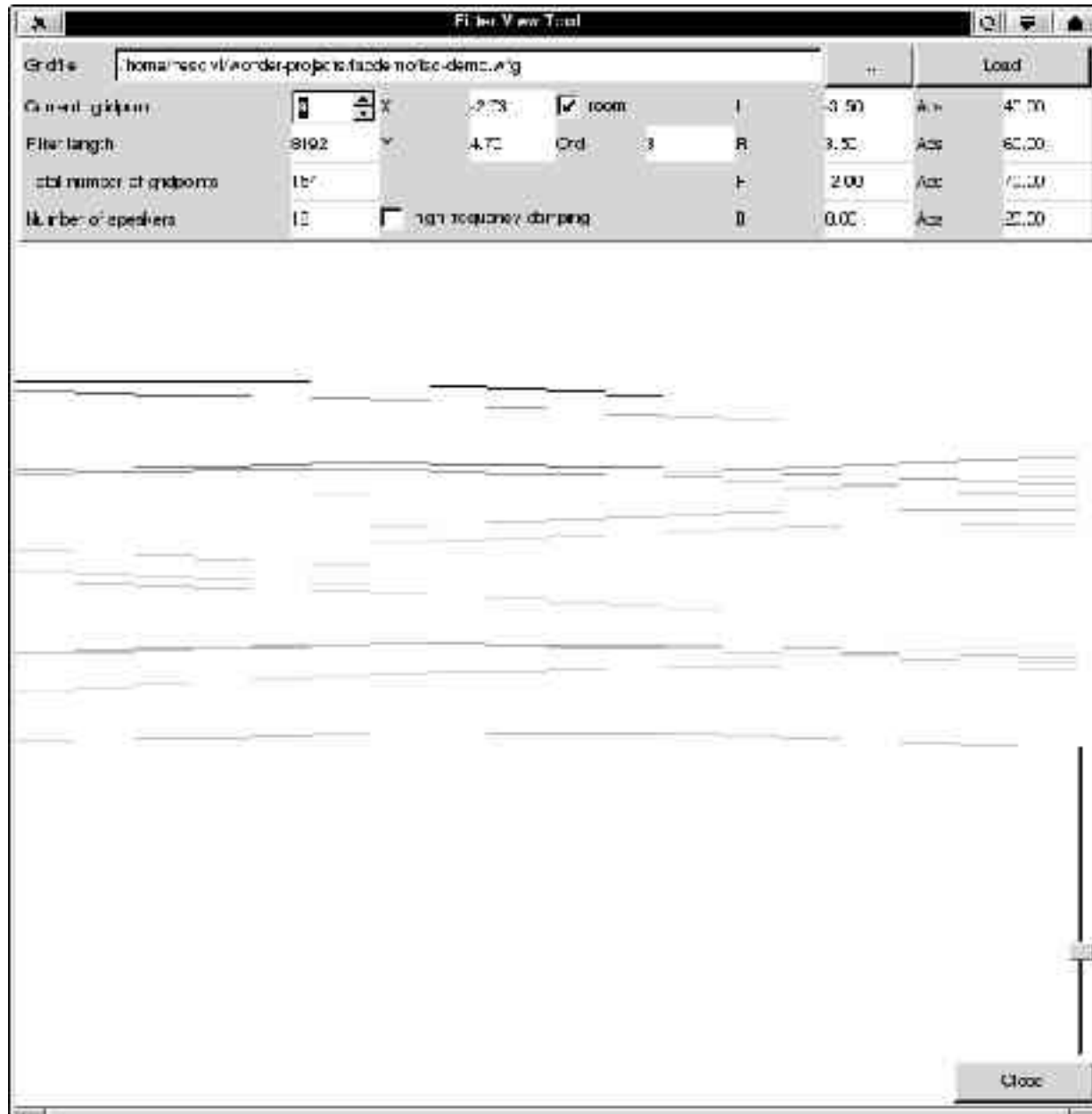
Speaker size window factors: | 0.5, 1, 1, 1, 1, 0.5, 0.5, 1, 1, 1, 1, 0.5, 0.5, 1, 1, 1, 1, 0.5 |

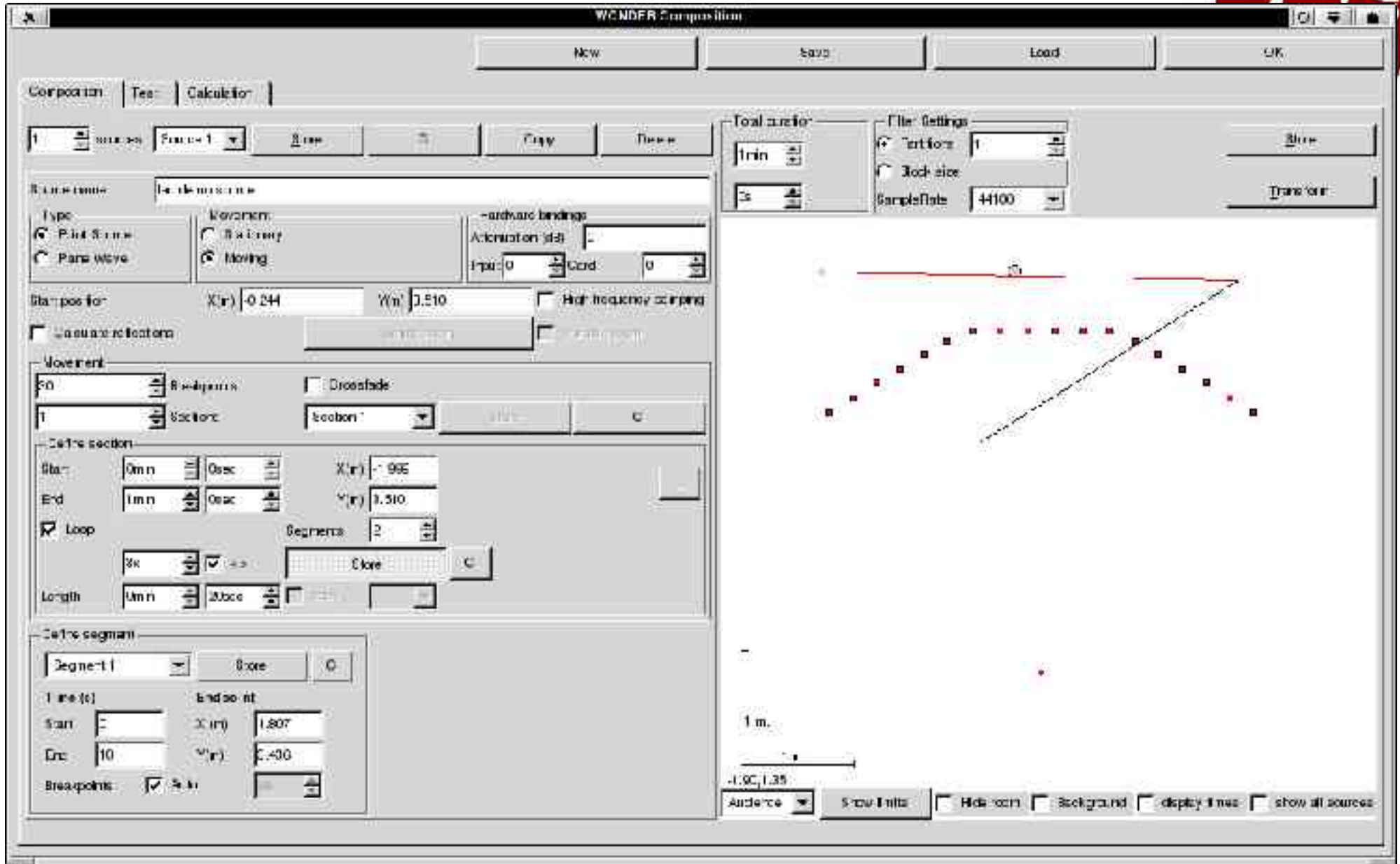
Hi-Lo points onto calculator.

Filter length: 0190 partitions: 1

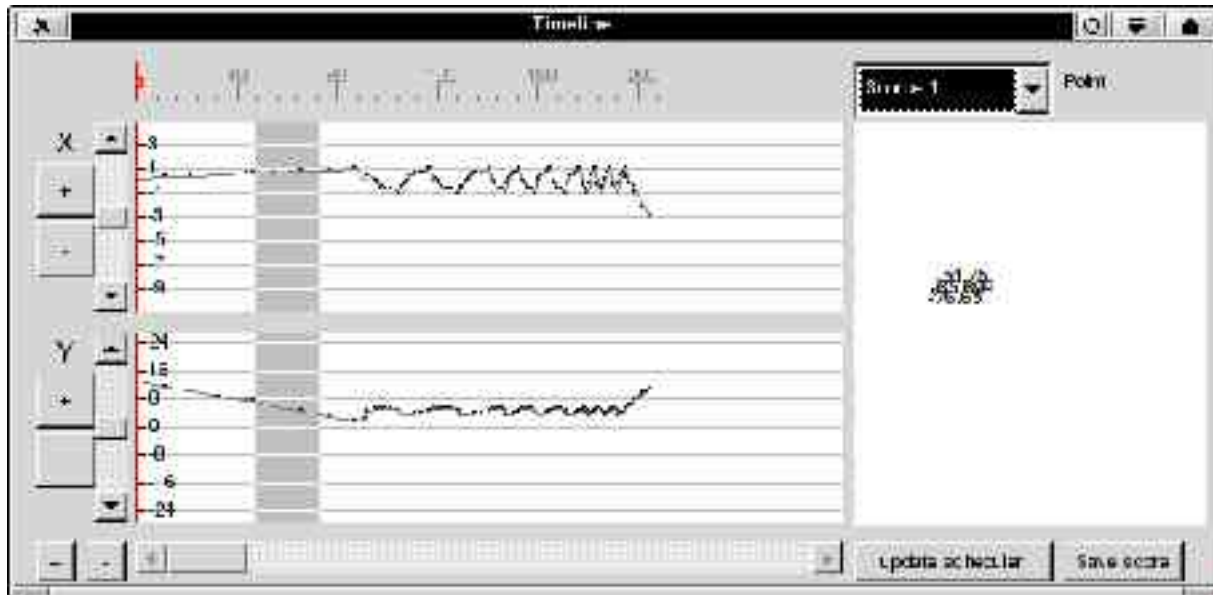
154 grid points

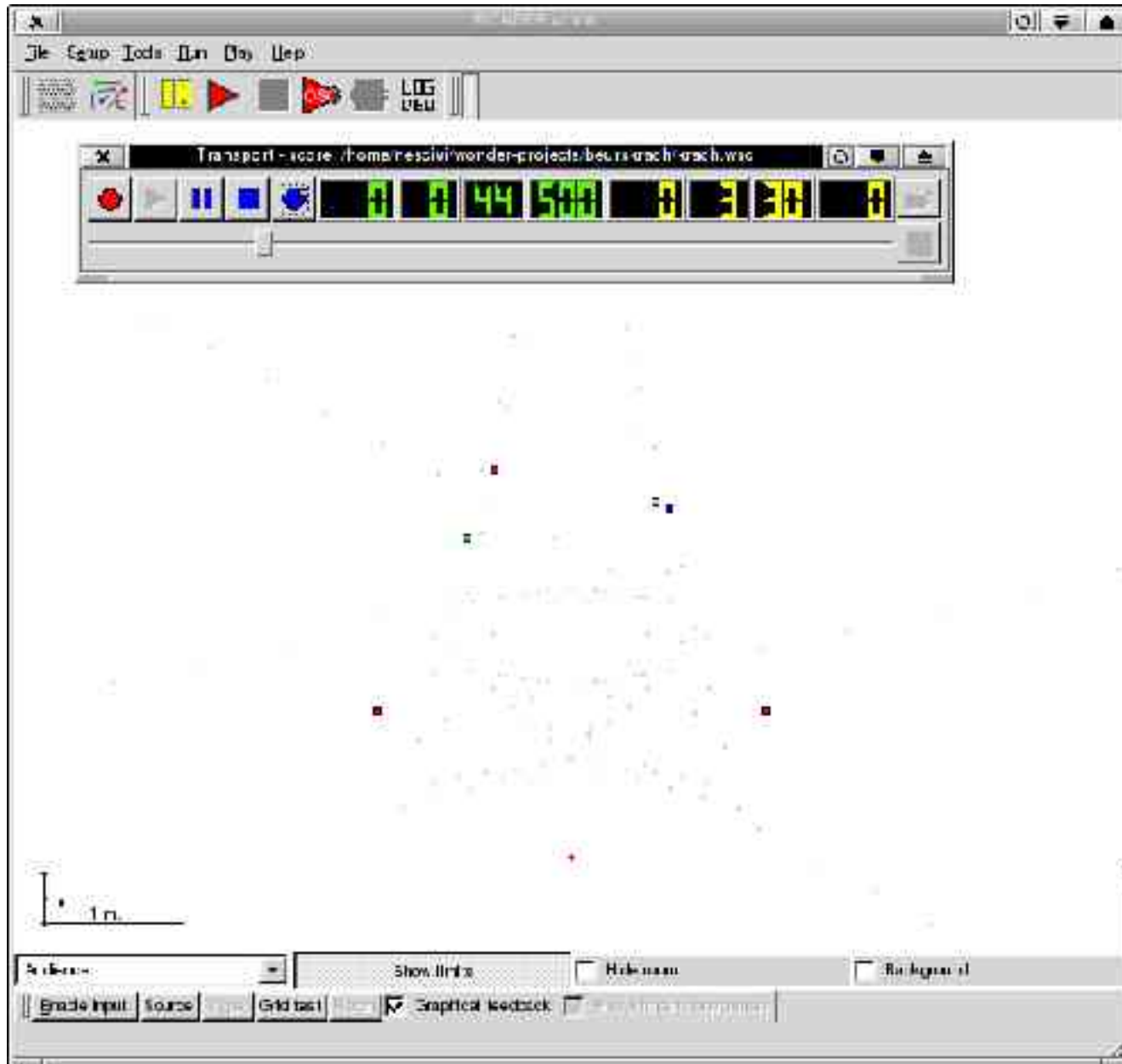
You can zoom in and out by using the mouse





# Score view







# Future work

- Some structural changes are still needed with concern to data management
- Synchronisation issues
- Use of SuperCollider as engine?
- Connection with EASE for Room Simulation
- Complex sound source definition





# Thanks

- project website:  
<http://gigant.kgw.tu-berlin.de/~baalman/>  
<http://sourceforge.net/projects/swonder/>
- contact:  
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