



Achalai

Francesco De Mattia

Conservatorio “A. Boito” - Parma

multidisciplinare, coinvolge archeologi, musicisti,
sici, informatici, ingegneri in una rete distribuita a
vello internazionale



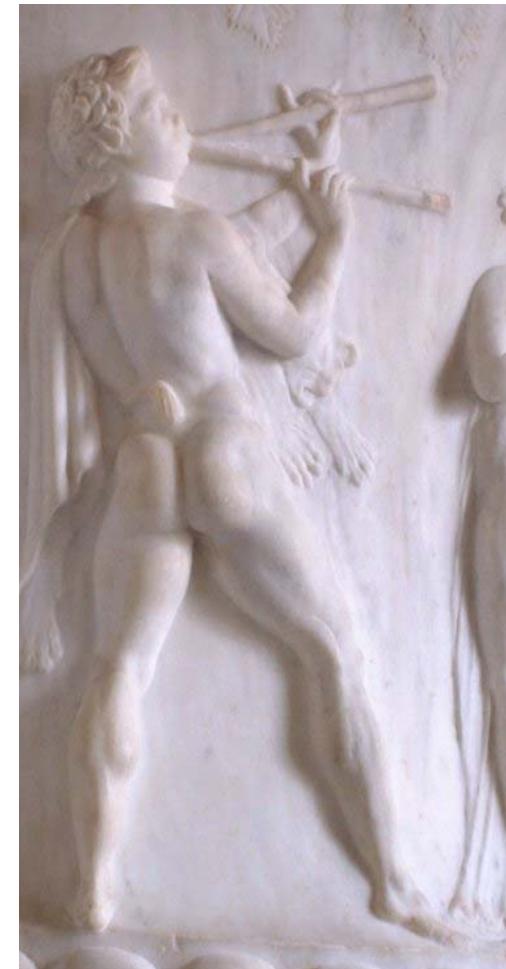
oncetto di base

partire dai ritrovamenti archeologici di
antichi strumenti musicali per arrivare a
farli suonare ancora



ea

creare un modello dello strumento musicale e
produrne il suono attraverso la simulazione delle
sue caratteristiche meccaniche



equazioni inspirete dall'archeologia

sintesi del modello fisico non è un concetto
nuovo in acustica

engono utilizzate equazioni create da Hiller e
Quiz nel 1971

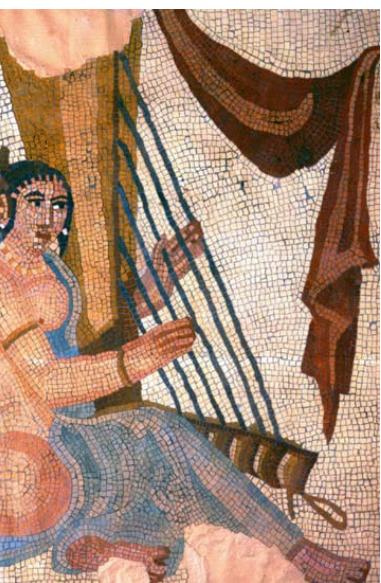
una tecnica molto intensiva dal punto di vista
computazionale

loro uso pratico è stato reso possibile dallo
sviluppo di ASTRA su GRID



sso di lavoro /1

GEANT/EUMEDCONNECT Network



computer model



Cyprus
Greece
Algeria
Egypt
Spain
France
Greece
Hungary
Ireland
Italy
Jordan
Morocco
Malta
Netherlands
Palestine Territories
Serbia
Tunisia
Turkey
U.K.
Albania (regions)

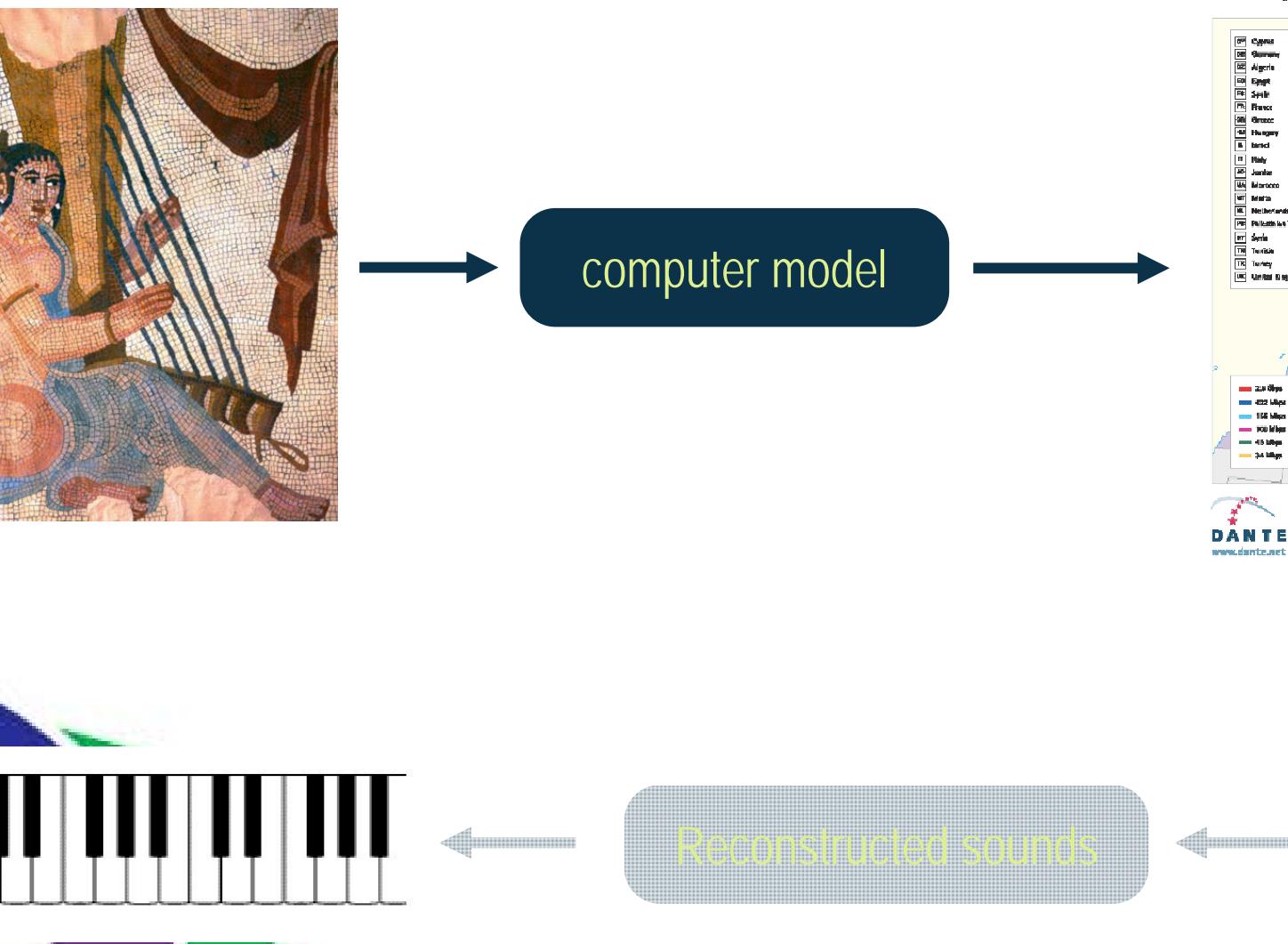
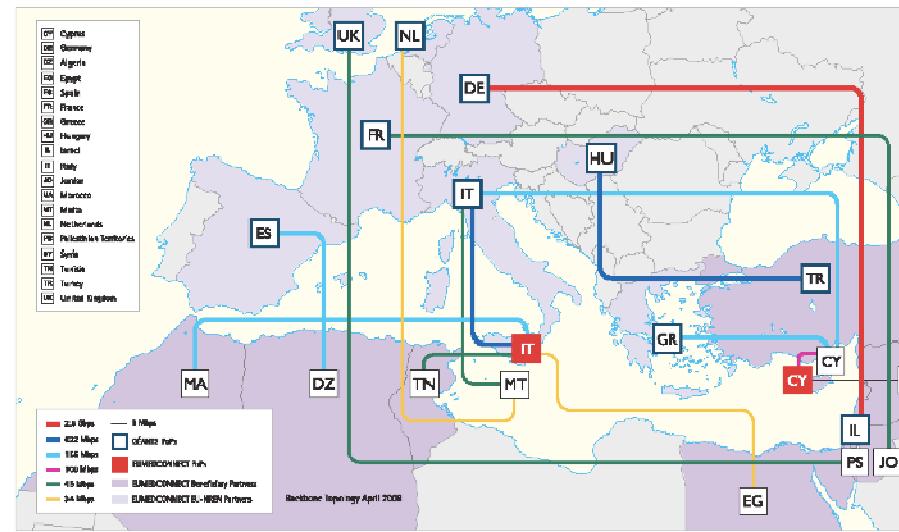
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32138760

Progetto di lavoro /2

GEANT/EUMEDCONNECT Network



Linking Mediterranean research and educational communities to Europe



Progetto di lavoro /3: GENIUS Grid Portal

STRa Services!

- [Start a Demo](#)
- [Job\(s\) Queue](#)
- [Clean Job\(s\) Queue](#)
- [Job\(s\) Data](#)
- [Back home](#)

Start a Demo

Step 1.

Please, select the ASTRA demo you want to run on the GILDA testbed.

Demo Selected: 01. Bach fugue played on a reconstructed Epigonion

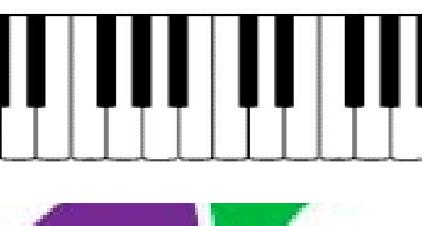
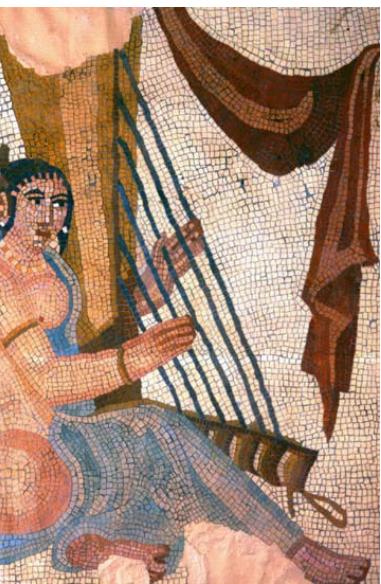
Start ASTRA demo

- 01. Bach fugue played on a reconstructed Epigonion
- 02. Middle age piece (G. Dufay) played on 4 reconstructed Epigonion
- 03. Excerpt from a XVII Century piece (A. Banchieri) played on 4 reconstructed Epigonions
- 04. Excerpt from a XVII Century piece (D. Buxtehude) played on 3 reconstructed Epigonions
- 05. Excerpt from a XIX Century piece (F. Schubert) played on 3 reconstructed Epigonions

ASTRA Queue

Globus JobID	Last Update Time	Status	Destination	Ex Co
FM2hLB5qTmdnNkUDwx0kAA	13:41:02 Fri Dec 26:	Done	iceage-ce-01.ct.infn.it:2119/jobmanager-lcgpbs-infinite	0
oVxjPE1fFlkul1zJpulIVw	13:33:59 Fri Dec 26:	Scheduled	grid010.ct.infn.it:2119/jobmanager-lcgpbs-infinite	
5GcS-h8Qs1-DkcxJVz0Gmw	13:33:35 Fri Dec 26:	Scheduled	grid010.ct.infn.it:2119/jobmanager-lcgpbs-long	

sso di lavoro /4



Kontakt 3 - Native Instruments

Master Editor: 0.00 Vol dB, 120.00 BPM, Tap, Metronome On, Master Tune: 440.00 Tuned Hz, Reference Tone: A3 Vol On

Instrument EditMode: Group 125, Edit all Groups

EPI: Output: st. 1, Voices: 0, Max: 32, Purge, Midi Ch: [A] 1, Memory: 304.16 MB

Instrument Options, Group Editor, Mapping Editor, Wave Editor, Script Editor

Change Velocity: Bypass, Preset, Curves, Max: 80, Min: 10, Random: 0, Out: Linear

Source: DFD, Preset: MIDI: default, Mod: 0.00, Tune, Tracking, Release Trigger, HQI: standard

Group InsertFx: Pre, Add Fx, Routing: Pre Amp, Post Amp

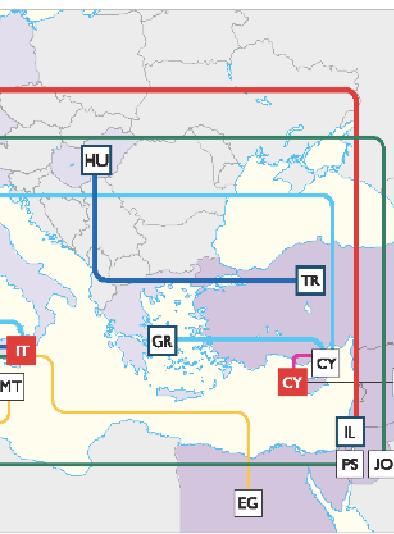
Pitch Mod: +2 oct

A digital piano keyboard interface showing a standard 88-key layout.

The Kontakt interface shows various controls for instrument editing, including velocity curves, source selection, and routing options. The 'EPI' instrument is selected, displaying its parameters and current state.

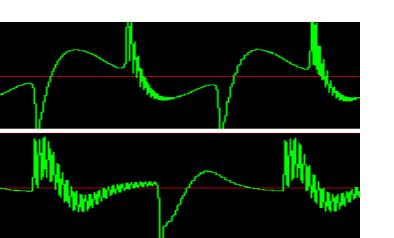
EDCONNECT
work

Mediterranean research
communities to Europe



EANT2
www.eant2.net

EDCONNECT is co-funded by the European Union
Project No. EUREKA



o strumento ricostruito: l'epigonion

a settembre 2008, il suono dell'epigonion (uno strumento musicale a forma di arpa dell'antica Grecia) è finalmente disponibile



Campionamenti multipli per la dinamica

Sono stati generati per ogni nota 127 diversi campionamenti, relativi a 127 livelli di intensità

112 campioni, per un totale di circa 20 GBytes

Possibilità di variare la dinamica durante l'esecuzione

Natural feeling dal punto di vista dell'esecutore

Spettro del suono cambia a seconda dell'intensità del tocco, come nello strumento reale

Computation time:

→ circa 10 ore su GRID

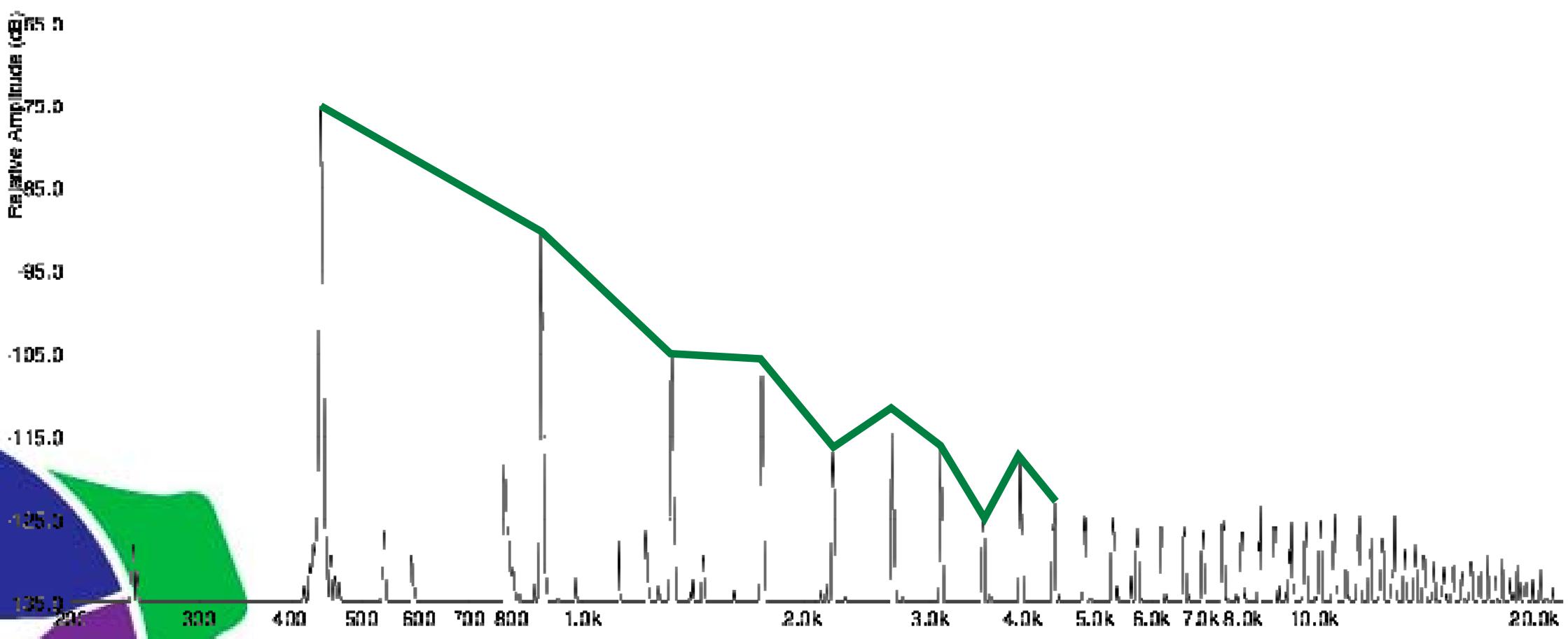
→ più di 2700 ore su computer standard

$a^3 - 440$ Hz

Left Channel



10 MIDI level spectrum

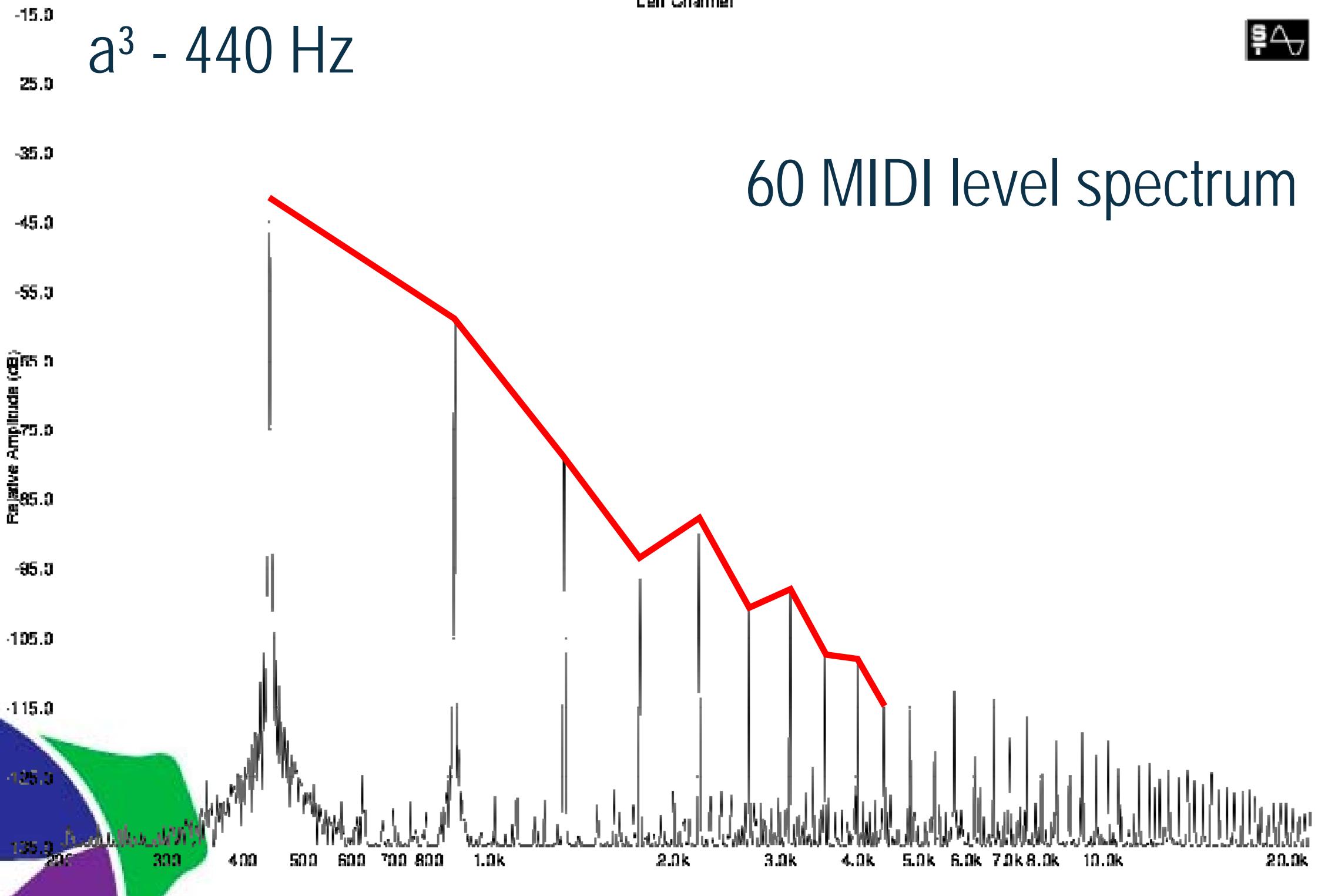


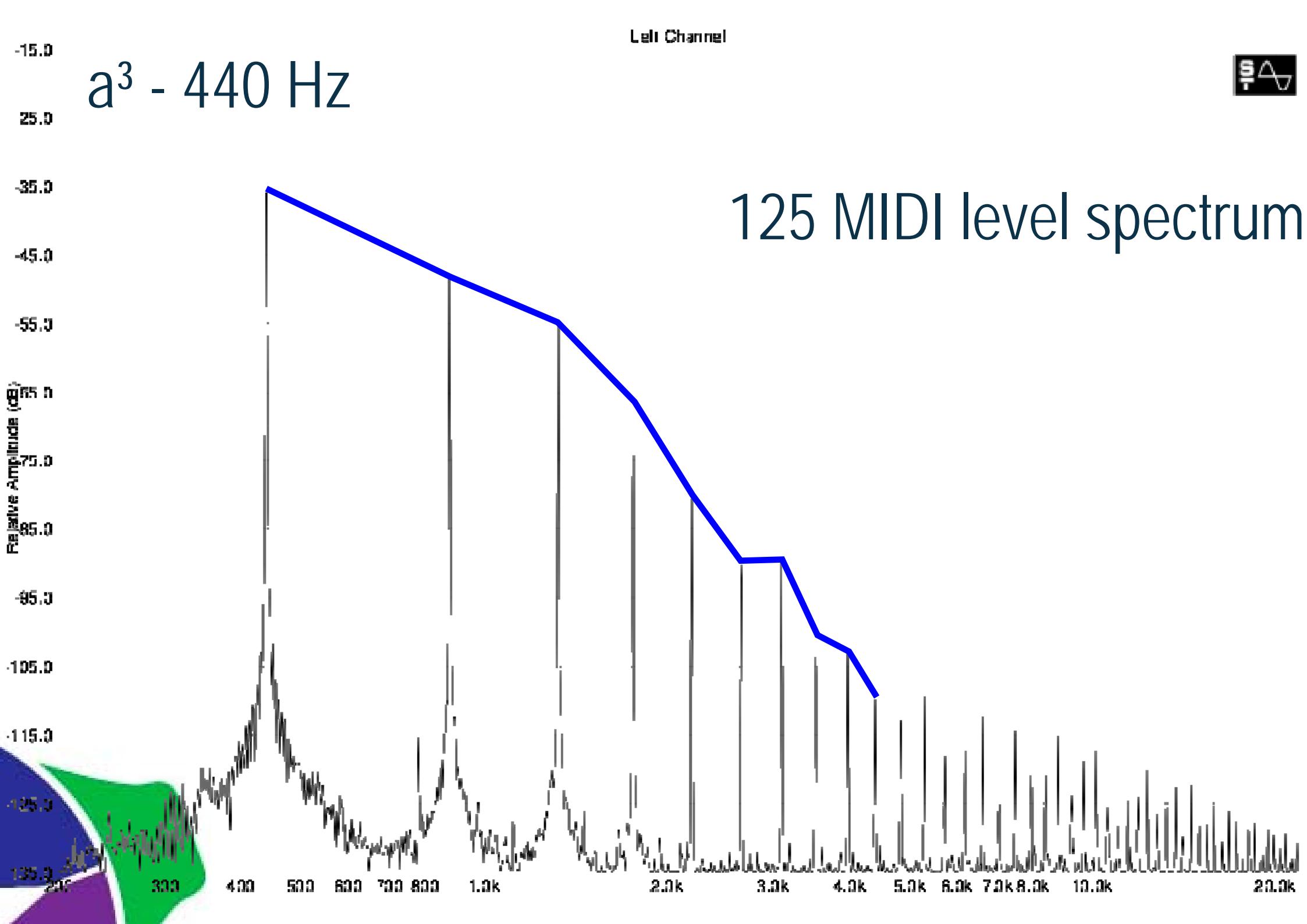
$a^3 - 440$ Hz

Left Channel



60 MIDI level spectrum

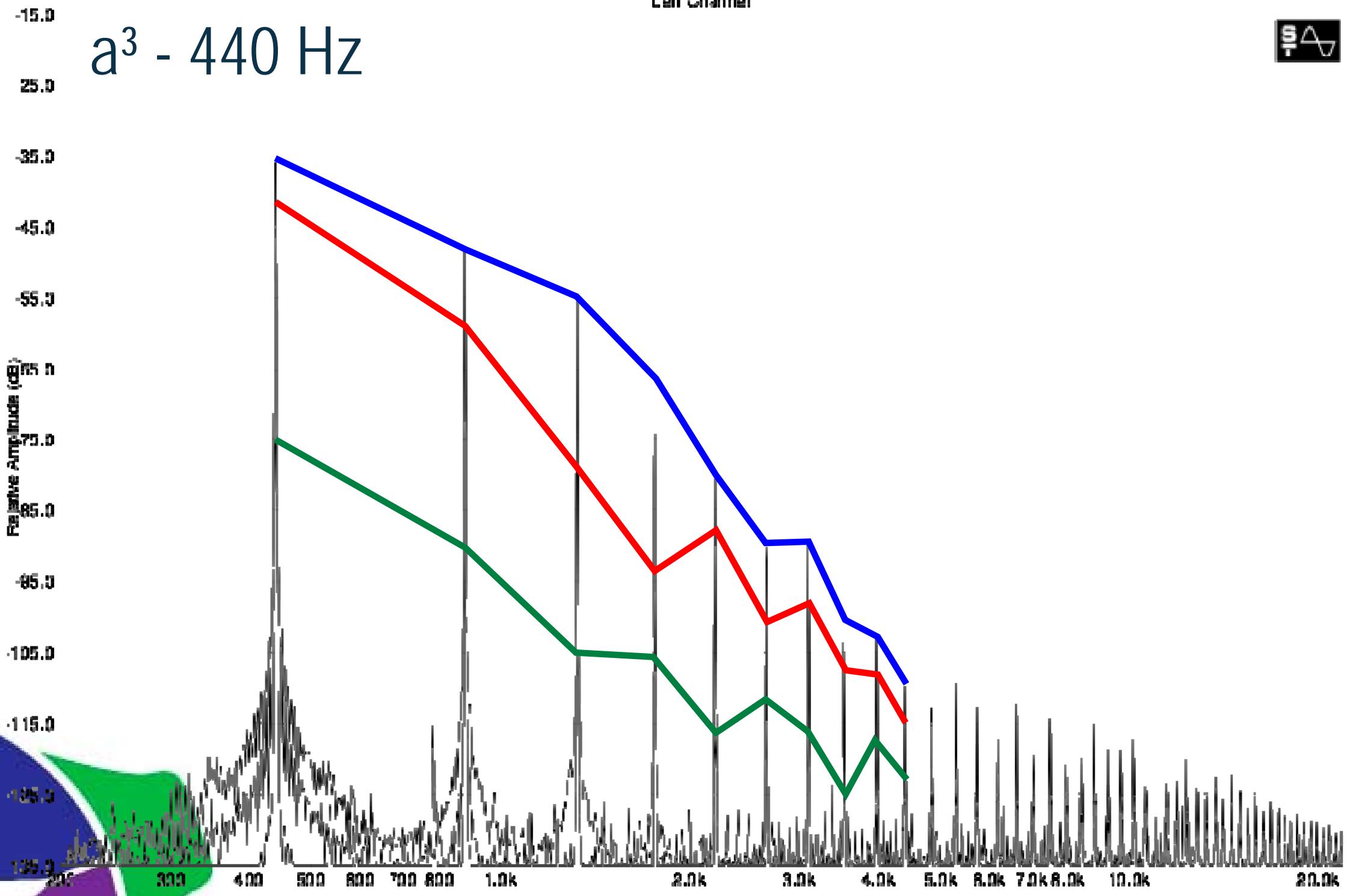




Left Channel



a³ - 440 Hz

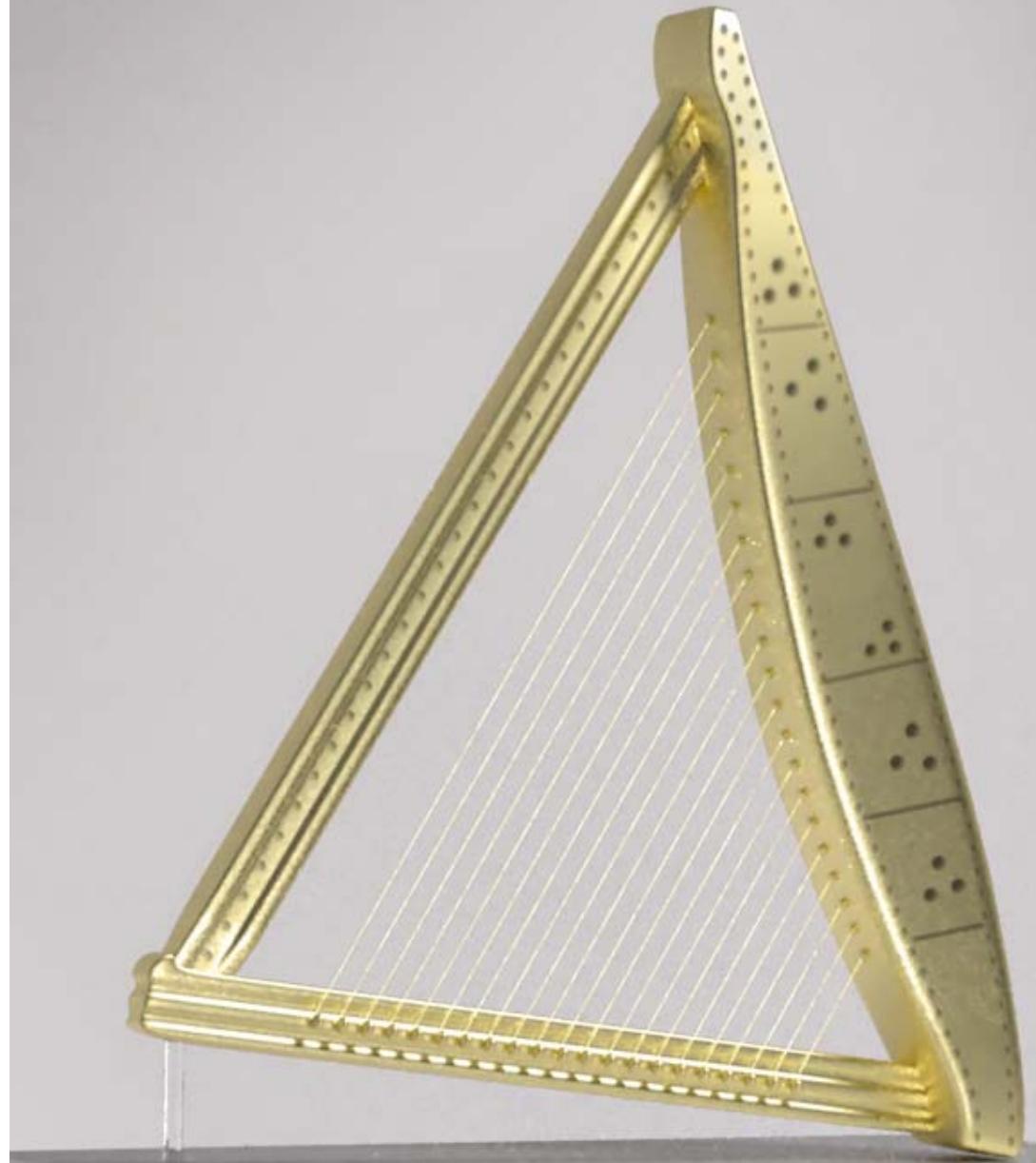


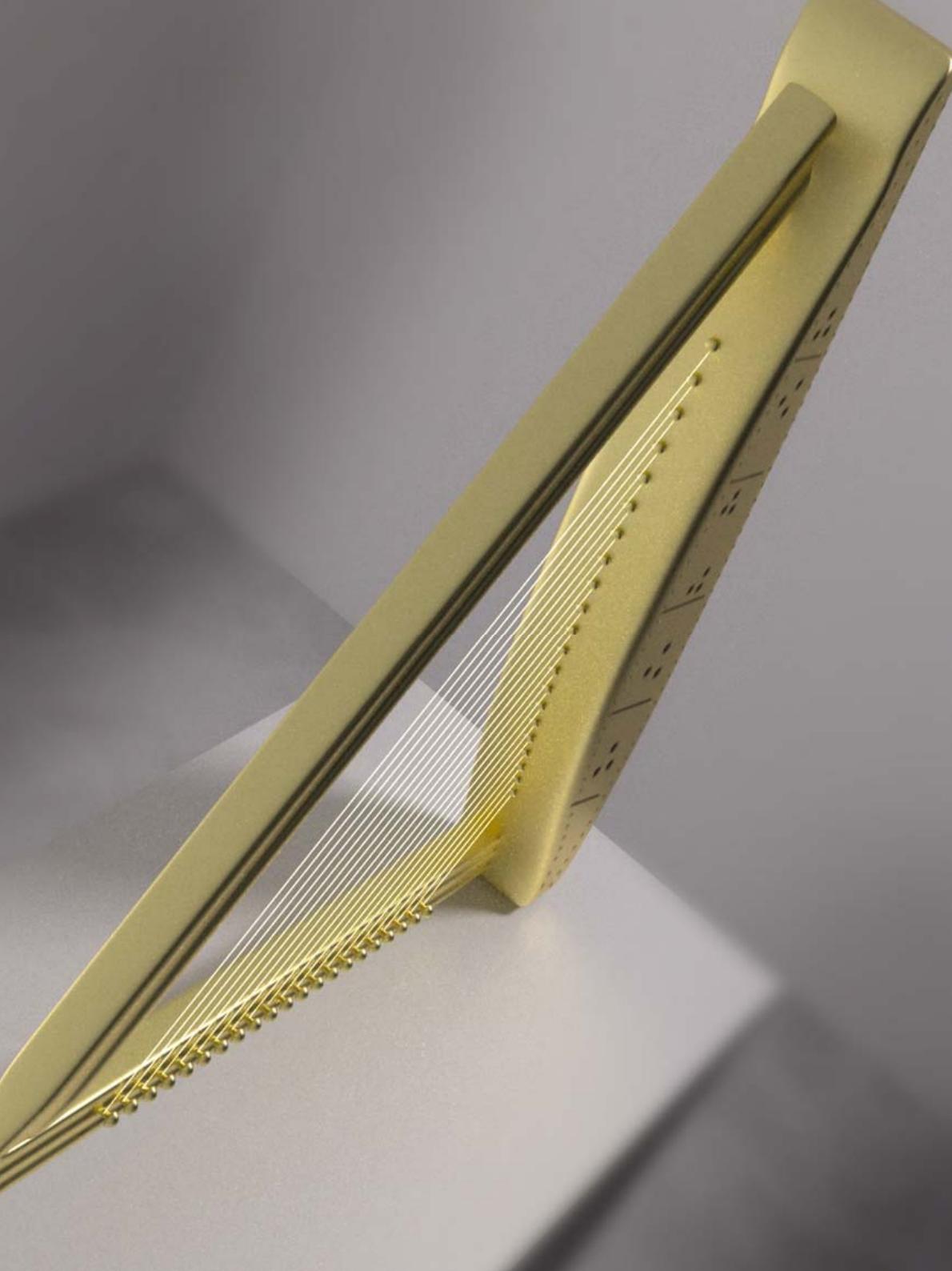
igonion /1

age from Francesca Baghino and Fausto

zoli

cStudio - Parma



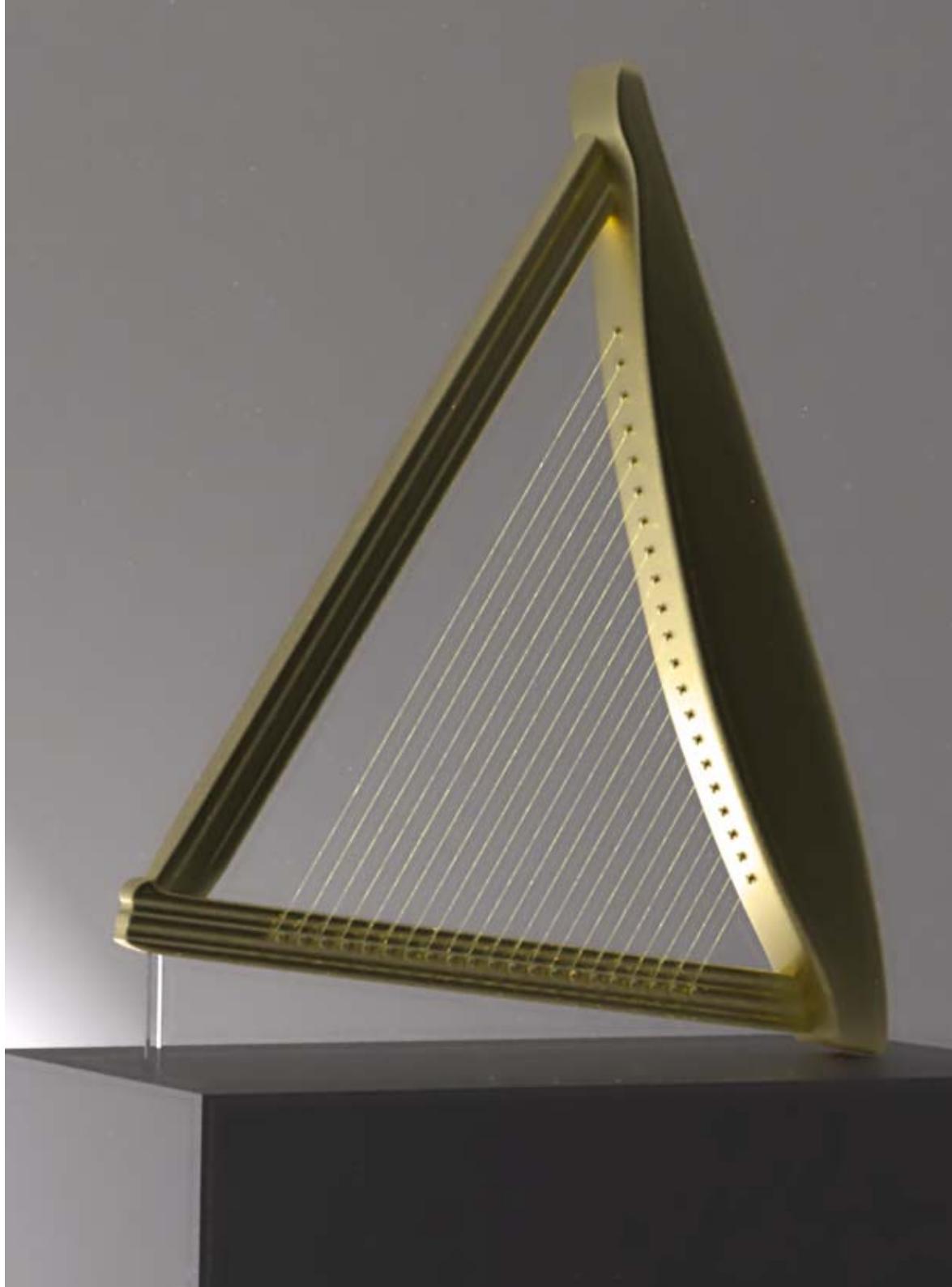


epigonion /2

3d image from Francesca Baghino and R
Ugozzoli
VisarcStudio - Parma

gonion /3

Image from Francesca Baghino and Fausto
Zoli
cStudio - Parma





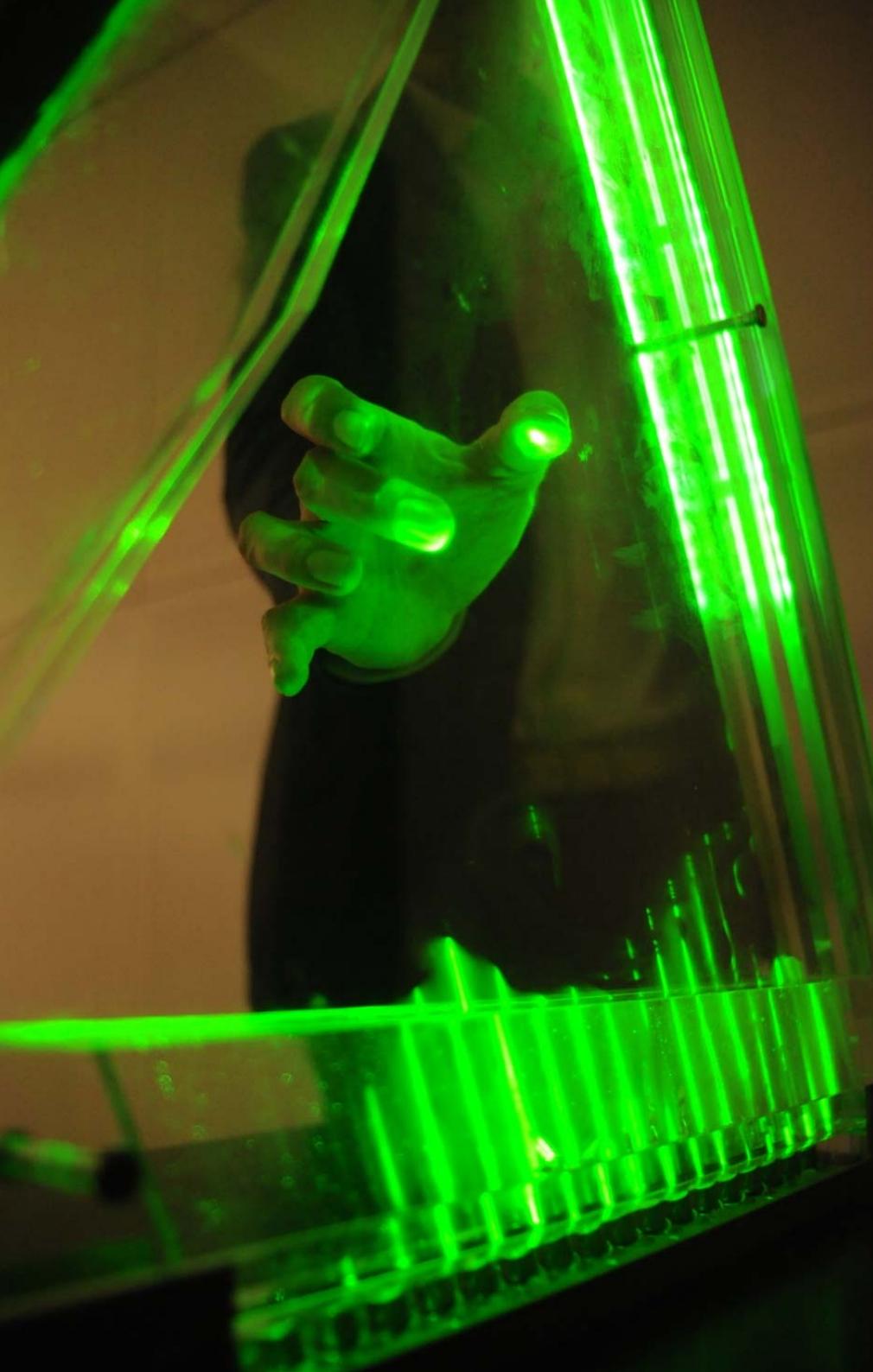
barbiton /1

3d image from Francesca Baghino and Fa
Ugozzoli
VisarcStudio - Parma

piton /2

ge from Francesca Baghino and Fausto
oli
Studio - Parma





Laser Epigonion

di Giorgio Uguzzoli

Casa del Suono, Parma



First Sounds Orchestra

suono dell'epigonion si fonde perfettamente con un ensemble di musica barocca, formato da archi e fiati

Tutti gli strumenti ricostruiti saranno suonati da uno speciale ensemble: Los sounds Orchestra, l'orchestra di ASTRA project

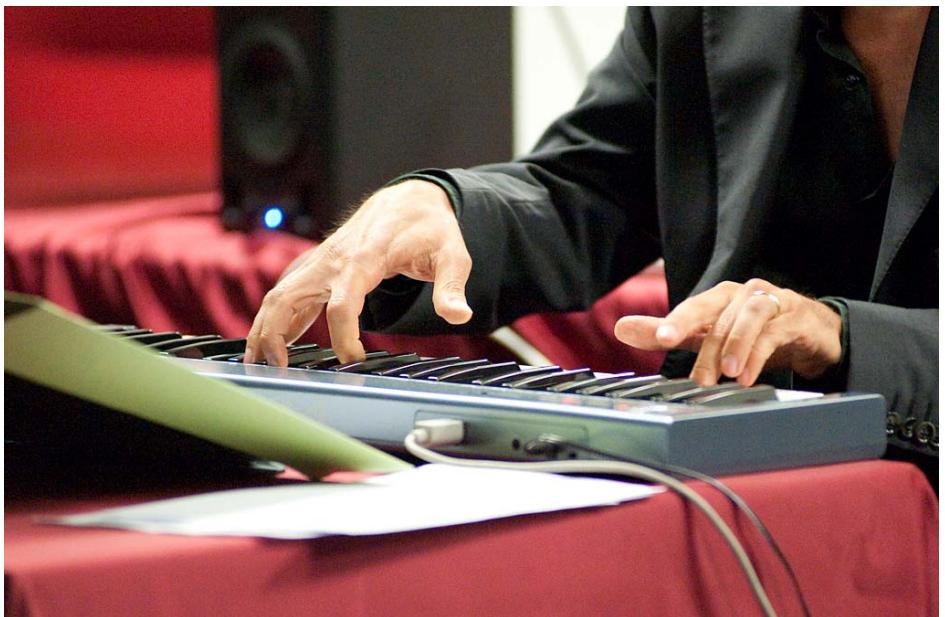
tratta della prima orchestra al mondo composta da soli strumenti ricostruiti su Grid



poli, Festival Note d'Inverno, 14.12.2008, uSOB



tania, Musica@Fisica, 26.6.2009



iovanni Paisiello, 12 Divertimenti per Settetto di Fati

nsemble di Fati del Teatro di S. Carlo di Napoli

rossima uscita il CD su AMADEUS

ilizzo dell'epigonion per il b.c.





Proyecto ACHALAI



Achalai

Colaborativa de recuperación musical preHispánica AncestraL Armon

Investigación y tecnología

Bolivia: Universidad Autónoma Tomás Frías de Potosí

Chile: Museo Chileno de Arte Precolombino - Universidad de La Serena - Pontificia Universidad Católica de Chile - Universidad de La Frontera - EUNA - RedCLARA

Colombia: Universidad Autónoma de Occidente - Universidad de Ibagué
Universidad del Atlántico - Asociación Totolincho

Ecuador: Pontificia Universidad Católica de Ecuador, sede Ibarra - Universidad Nacional de Chimborazo

España: Universidad de Málaga - Universidad de Cataluña - Universidad de Coruña

Méjico: Universidad Autónoma de México

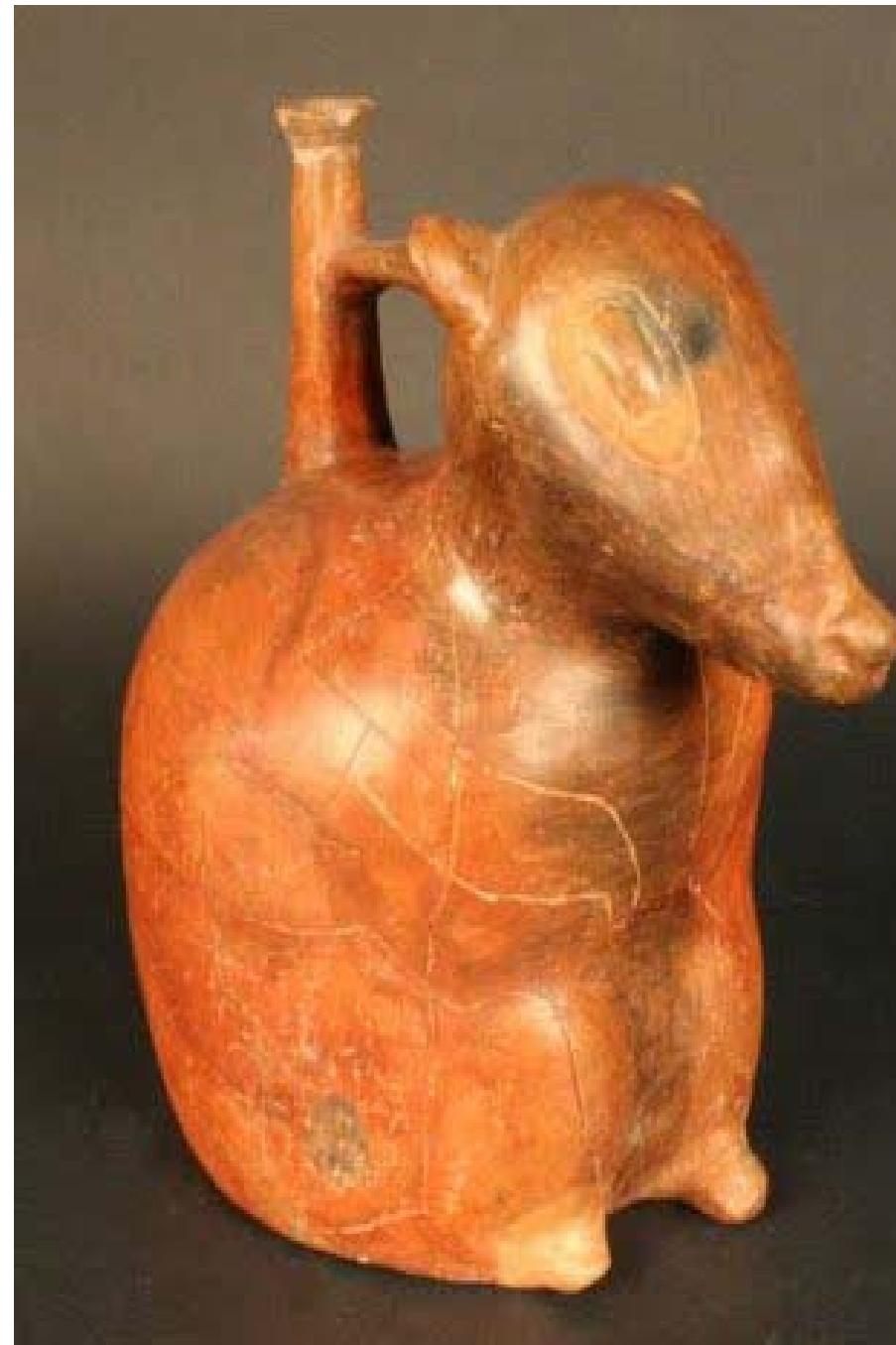
Perú: Museo Nacional de Arqueología, Antropología e Historia - Escuela Superior del Folclore José María Arguedas



arina sinù de Colombia



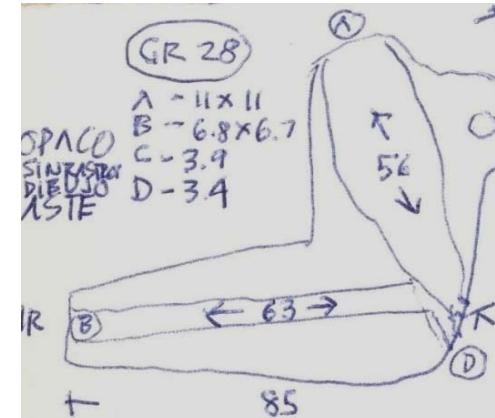
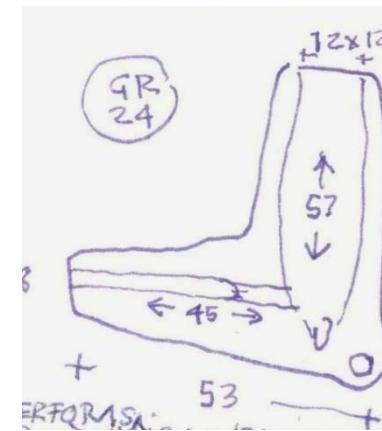
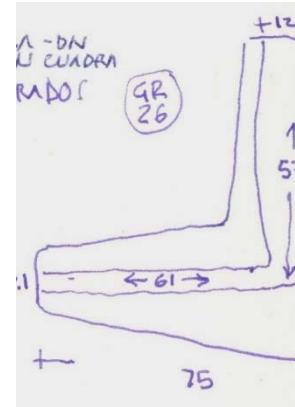
otella sibadora de Ecuador



tara de Perù



uta acodada de Chile



tara lítica de Bolivia





grazie per  attenzione

"Musica@Fisica"

Prof. Roberto BARBERA

e

Dr. Giuseppe LA ROCCA

[roberto.barbera@ct.infn.it,
giuseppe.larocca@ct.infn.it]

Università di Catania
Catania, 26 Giugno 2009

grid.infn.it