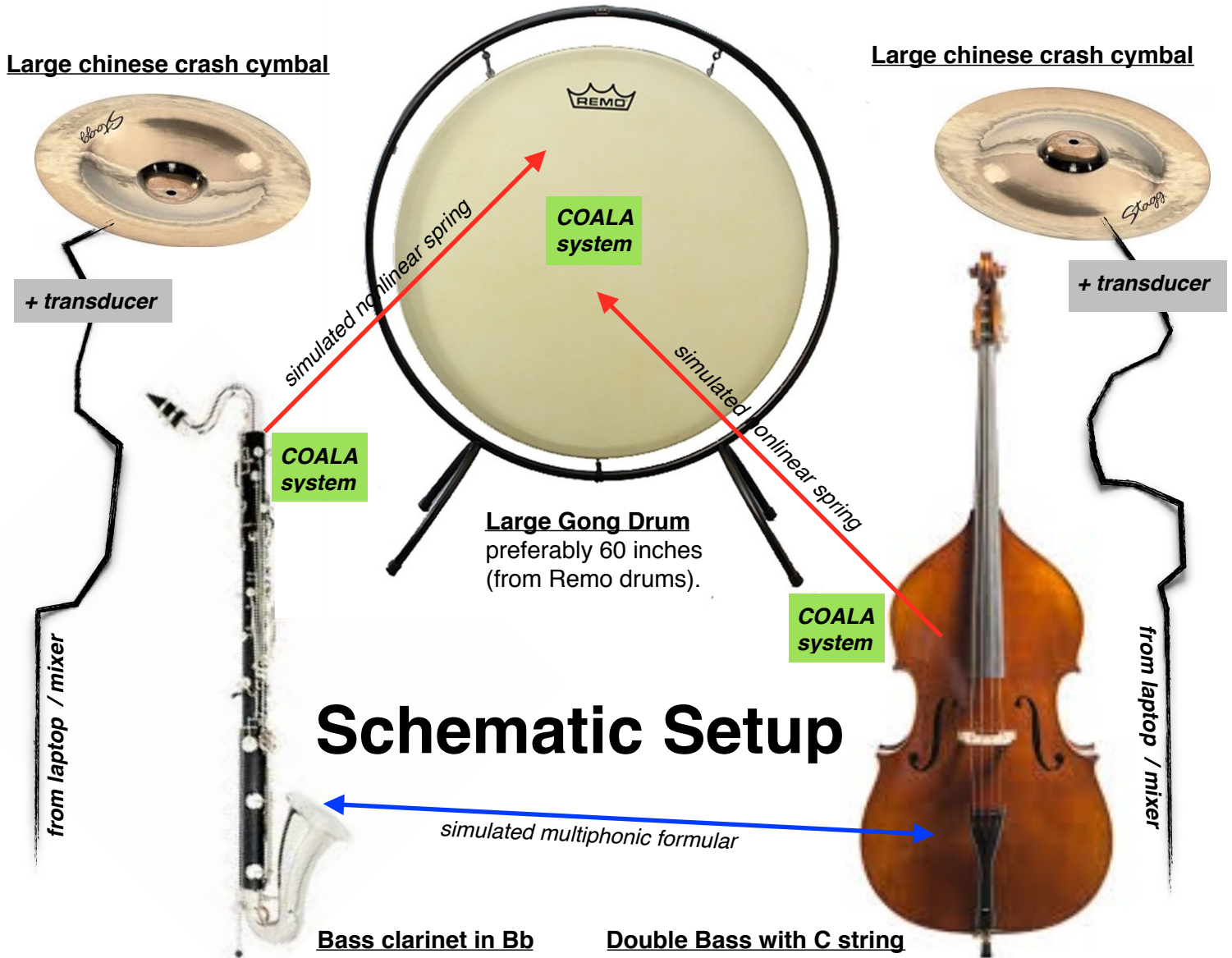# Trio with (simulated) nonlinear functions

- 3 instruments (bass clarinet, double bass, bass gong drum) each equipped with a COALA system (IRCAM)
- 2 large chinese cymbals fitted with large transducers (from Clarke synthesis). Please see Vimeo links.

The instruments are simultaneously played by musicians and played at by computer operated transforms of inputs from the other instruments. Physical models of the instruments will run in parallel and "retroacts" with real playing in order to favour multiphonics and possible chaotic behaviour.

Large chinese crash cymbal

Large chinese crash cymbal

+ transducer

+ transducer

COALA system

simulated nonlinear spring

COALA system

simulated nonlinear spring

COALA system

COALA system

Large Gong Drum preferably 60 inches (from Remo drums).

Schematic Setup

from laptop / mixer

from laptop / mixer

simulated multiphonic formular

Bass clarinet in Bb

Double Bass with C string

Each instrument should be equipped with a COALA system comprising a quality contact microphone to pick up signals and a transducer to transmit incoming signals. The setup constitutes deliberately a feedback scenario which should be controlled / limited carefully at every gain stage to prevent volume overload.

red arrow headed lines : unidirectional transfer of signals modulated by (simulated) *nonlinear springs*
blue arrow headed line : bidirectional transfer of signals modulated by (simulated) *multiphonic formular*

The 3 instruments also acts a non conventional speakers, each with special charateristics :
gong drum = "reverberant", double bass = "soundboard", bass clarinet = "sound column or distant" .

2 large (chinese) cymbals fitted with large transducers (from Clarke synthesis) will act as resonant speakers (much like the 12-stringed resonators of the original Ondes Martenot) transmitting a computer controlled mix of the instruments as well as physical modeling based excitation signals. Output level will be only slightly louder than the acoustical level of the instruments for the deliberate system feedback to work.