

LATEX (2006)

for amplified ensemble

(oboe, violin, double bass, guitar and percussion)

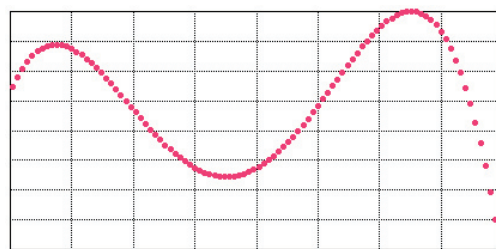
This piece uses the ensemble as a single macro instrument. The first half of the piece (until bar 72) is structured around a continuous process of ring modulation algorithmically programmed in AC Toolbox (and then retranscribed into musical notation).

The basic motif of the piece is a curve (borrowed from Clarence Barlow's Music-quantics book) which describes a combination of a logarithmical and exponential motion (a sort of "s").

I programmed the formula in LISP and I adapted it to change the gradient of the curve linearly in time, and I compiled it to be used as a tool in the AC Toolbox.

Fig. 28 29
LISP code
and graphical
representation
of the
basic motif in
LATEX

```
(defun dynamic-logexpo-motion (n min-gradient max-gradient)
  "does an s motion from 0 to 1 with a constant ascending or descending gradient.
  Arguments are n number of steps (resolution) min-gradient and max-gradient
  syntax-> (dynamic-logexpo-motion (n min-gradient max-gradient))"
  (loop
    for x in (create 'list n (line-segment n 0 1))
    and gradient in (create 'list n (line-segment n min-gradient max-gradient))
    collect (+
      (* gradient x)
      (+
        (* (* 3 (- 1 gradient))
          (* x x))
        (* (* 2 (- gradient 1))
          (* (* x x) x))))))
```



All the form of the piece in this first part is an evolution of this basic curve which is being ring-modulated, first by a constant frequency, then by a continuous ascending glissando, then by an inverted version of the motif and so on. All this evolution is developed around the idea of the elasticity of the materials both in time and frequency, therefore there is a constant process of shrinking and extending of the musical material.

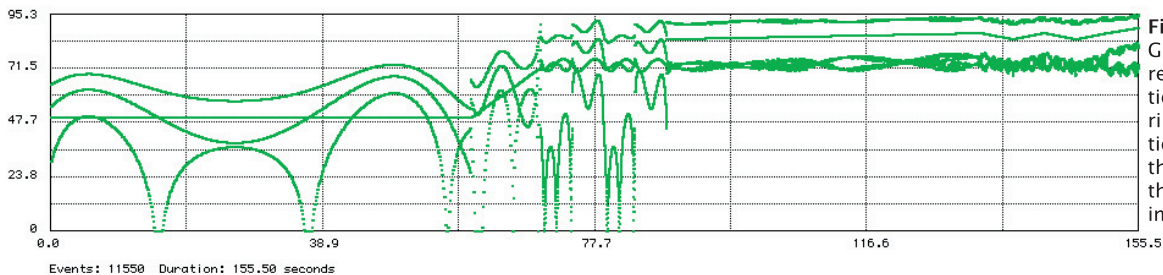
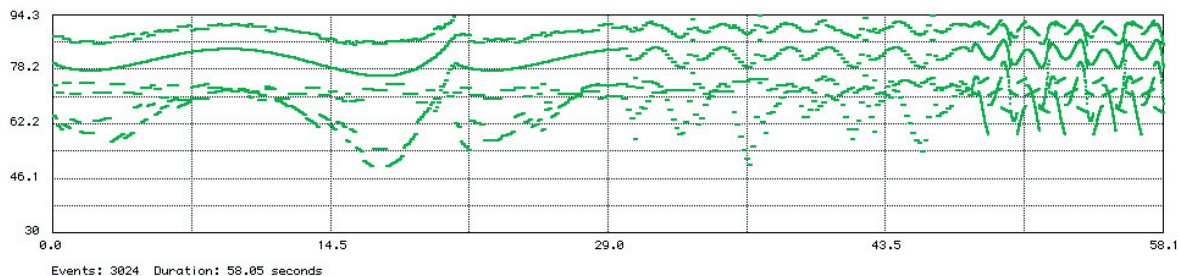


Fig. 30 31
Graphical
representation
of the ring modulation
process that governs
the harmony
in LATEX



The ring modulation algorithm produces then a total of four curves which are associated among them by a continuous transformation of timbre. This is as important for creating the idea of a single macro-instrument, as it is the use of rhythmic homophony, and the use of amplification.

This map, produced the basic material to be transcribed. The particularities of the instrumentarium implied a lot of strategies for reconstructing the process with the register limitations of the ensemble. The transcription demands a very detailed and rigorous compositional work. The facilities of printing text scores in the AC Tool-box helped a lot in this process. Nevertheless it is always an arbitrary procedure and that is the charm perhaps of this way of working.

The rest of the piece from bar 72 until the end is based on the harmony of oboe multiphonics, as a way of creating a contrast with the machine-like timbre of the first part. The idea of a single instrument is almost broken by a sort of hoquetus antiphony, which blurs soon into homophony. Polyphony does not exist in the piece as voice counterpoint, but sometimes a sort of polyphony can be perceived as internal changes inside an evolving timbre.

This piece was commissioned by Vortex Ensemble with the sponsorship of Fondation Nicati and Fondation Nestlé pour l'art and was premiered the 30/03/06 in Festival Archipel in Geneva Switzerland, using the set-up discussed in chapter 2 (Salon d'écoute).