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Enabling Grids for E-sciencE

Scientific data audification within GRID: from Etna volcano seismograms to text sonification

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Information Society
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- Data audification is the representation of data by means of sound signals; it can be considered as the acoustic counterpart of data graphic visualization, a mathematical mapping of information from data sets to sounds.

- Audification may give information about the inner structure of the represented data since any kind of regularity in the original data set will be conveyed to the generated sound (spectral lines, …).

- Sonic representations are particularly useful when dealing with complex, high-dimensional data, in monitoring tasks and in all the situations where it is practically impossible to apply any visual inspection.

- More interesting and intriguing aspects of data sonification concern the possibility of describing patterns or trends, through sound, which were hardly perceivable otherwise.

Data sonification: two examples

Seismograms sonification

- **Data set:** *digital samples from seismographs*

- **Audification:** *creation of a melody whose profile recall exactly the seismogram one*

- **Advantages:** *structural properties of the original seismogram (regularities, long range correlations) are mapped to structural properties of the melody.*
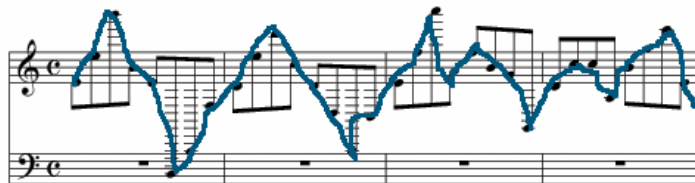
Text sonification

- **Data set:** *ASCII text*

- **Audification:** *creation of a melody by associating a note from a certain pitch set to each character of the text*

- **Advantages:** *structural properties of the text (regularities, rhymes, metric) are mapped to structural properties of the melody.*

Ps. Exsul-tá-te Dé- o adju-tó-ri nóstro : * ju-bi-lá-te Dé- o
Já- cob. Gló-ri- a Pátri. E u o u a e.