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

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Data audification is the representation of data by sound signals; it can be considered as the acoustic counterpart of data graphic visualization, a mathematical mapping of information from data sets to sounds. Data audification is currently used in several fields, for different purposes: science and engineering, education and training, in most of the cases to provide a quick and effective data analysis and interpretation tool. Although most data analysis techniques are exclusively visual in nature (i.e. are based on the possibility of looking at graphical representations), data presentation and exploration systems could benefit greatly from the addition of sonification capacities. In addition to that, sonic representations are particularly useful when dealing with complex, high-dimensional data, or in data monitoring tasks where it is practically impossible to use the 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. Two examples, in particular, will be discussed in this paper, the first one coming from the world of geophysics and the second one from linguistics.

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