ACOUSTICS2008/2616 Dynamical Hierarchical Self-Organization Of Harmonic And Motivic Musical Categories

Ricard Marxer, Piotr Holonowicz, Amaury Hazan and Hendrik Purwins Pomeu Fabra University, Ocata 1, 08003 Barcelona, Spain

We introduce a generic model of emergence of musical categories during the listening process. The model is based on a preprocessing and a categorization module. Preprocessing results in a perceptually plausible representation of music events extracted from symbolic input. The categorization module lets a taxonomy of musical entities emerge according to a cognitively plausible online learning paradigm. We show the advantages of using a conceptual clustering method in the musical domain. The system extracts multi-level hierarchies and can be tuned to clustering at various resolutions. The potential of the model is exemplified by exposing it to two different datasets resulting in music harmonic and motivic categorization consistent with music theory.