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Chantal Buteau* (cbuteau@brocku.ca), 500 Glenridge Ave, St. Catharines, Ontario L2S3A1, Canada. *Topological Model of Melodic Clustering of a Music Score: Theory and Application to Schumann's Träumerei.*

We present an extended topological model of motivic analysis that includes the concept of melodic clustering. With the concepts of *contour* (set mapping on motives), *gestalt* (orbits from a group action), and *motif similarity* (sequence of pseudo-metrics for motives of same cardinalities), neighborhoods of motives are introduced and yield a T_0 - (non-Hausdorff) topological space for the analyzed score. In this space, the score's germinal motif corresponds to the motif with the 'most dense' neighborhood at a certain similarity threshold (neighborhood radius). Given a collection X of motives to be organized in melodic clusters, i.e. in 'significant' categories, we extract the ϵ -clusters from the topological space by considering, within the relative space X , intersections of some sets with respect to ϵ corresponding to the formalization of motif variations. The clustering is the family of all ϵ -clusters in function of ϵ .

An application of our extended model to Schumann's *Träumerei* is presented. The resulting clusterings are successfully compared to the music theorist Repp's melodic segmentation of the piece (Repp (1992). In *Journal of the Acoustical Society of America*, 92(5), pp. 2546-68). (Received September 26, 2006)