

Meeting: 1001, Evanston, Illinois, SS 23A, Special Session on Mathematical Techniques in Musical Analysis

1001-20-206 **Domenico Vicinanza*** (dvicinanza@unisa.it), DMI - University of Salerno, Via Ponte Don Melillo - Piazza Grahamstown, 84084 Fisciano, Salerno, Italy, and **Vittorio Cafagna** (cafagna@unisa.it), DMI - University of Salerno, Via Ponte Don Melillo - Piazza Grahamstown, 84084 Fisciano, Salerno, Italy. *Some remarks about well-formedness.*

We start giving an algebraic definition of a m -notes mode in a chromatic set of n elements as a composed map between Z_m and Z_n . Then we study the different geometries shown up by the modes around the circle of the fifths, proposing a natural definition of a winding number of a mode generalizing the concept of well-formedness, proposed by Carey and Clampitt. Thanks to the properties of this topological index, and the different patterns determined by the representation of different modes, we can successfully classify them. Finally, several properties, such as Myhill and CV and some connections with Stern-Brocot trees, are taken up and revised in this new framework. (Received August 27, 2004)