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Jason D Yust* (jason.yust@gmail.com), Boston University School of Music, 855
Commonwealth Ave., Boston, MA 02215. *Geometrical Realizations of Two- and
Three-Dimensional Generalized Tonnetze.*

Some recent work on generalized Tonnetze has examined the topologies resulting from Richard Cohn's common-tone based formulation, while other work has reformulated the Tonnetz as a network of voice-leading relationships and investigated the resulting geometries. This paper adopts the original common-tone based formulation and takes a geometrical approach, showing that Tonnetze can always be realized in toroidal spaces, and that the resulting spaces always correspond to one of the possible Fourier phase spaces. We can therefore use the DFT to optimize the given Tonnetz to the space (or vice-versa). I interpret two-dimensional Tonnetze as simplicial decompositions of the 2-torus into regions associated with the representatives of a single trichord type. The natural generalization to three dimensions is therefore simplicial decompositions of the 3-torus. This means that a three-dimensional Tonnetze is, in the general case, a network of *three* tetrachord-types related by shared trichordal subsets. I list the possible tetrachordal Tonnetze for the Z_{12} case and propose a classification of them based on different kinds of degeneracies. (Received September 19, 2016)