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Clifton Callender* (clifton.callender@fsu.edu), College of Music, Florida State University, Tallahassee, FL 32306, and **Rachel Hall**. *Homometric sets and Z-related chords*.

Two sets are *homometric* if they have identical Patterson functions and are unique up to translation and reflection. Homometric sets arise naturally in crystallography, when non-equivalent structures yield identical x-ray diffraction patterns, and music theory, when two chords have identical intervallic content yet are unrelated by (musical) transposition or inversion. (Music theorists say that such chords are “Z-related.”) This presentation will highlight the musical significance of the phenomenon, summarize the relevant mathematical literature, and demonstrate families of homometric sets not previously identified. (Received September 25, 2006)