1053-41-120 **Ahmed I Zayed*** (azayed@math.depaul.edu), Department of Mathematical Sciences, DePaul University, Chicago, IL 60201. *Generalizations of Chromatic Derivatives and Series.*

Chromatic series expansions of bandlimited functions provide an alternative representation to the Whittaker-Shannon-Kotel'nikov sampling series. Chromatic series share similar properties with Taylor series insofar as the coefficients of the expansions, which are called chromatic derivatives, are based on the ordinary derivatives of the function. Chromatic derivatives are linear combinations of ordinary derivatives in which the coefficients of the combinations are related to a system of orthonormal polynomials.

In this talk we outline a number of generalizations of chromatic derivatives and series, including generalizations to generalized functions and higher dimensions. (Received August 27, 2009)