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Ahmed I. Zayed* (azayed@depaul.edu), Chicago, IL 60614. *Chromatic Expansions and Orthogonal Polynomials.*

Chromatic derivatives and series expansions have recently been introduced in the class of bandlimited functions as an alternative representation to Taylor series and they have been shown to be more useful in practical applications than Taylor series.

The n -th chromatic derivative $K^n[f](t_0)$ of an analytic function $f(t)$, at t_0 is a linear combination of the ordinary derivatives $f^{(k)}(t_0)$, $0 \leq k \leq n$, where the coefficients of the combination are based on systems of orthogonal polynomials.

In this talk we show that functions in various function spaces and reproducing-kernel Hilbert spaces, including the Bargmann-Segal-Fock space \mathfrak{F} , can be represented by chromatic series expansions and as a result some properties of these function spaces can be deduced from those of chromatic series. (Received September 11, 2012)