

Science Seminar

Friday, November 13

Knott Hall B01

3pm

The Lanczos Derivative Story

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In his 1956 text *Applied Analysis*, the Hungarian-born mathematician Cornelius Lanczos presents an intriguing means for defining the derivative, one that is based solely upon the definite integral. On the surface, Lanczos' formula appears quite peculiar and bears no resemblance to the derivative from introductory calculus. However, a deeper investigation shows this quantity has intriguing connections to the fields of mathematical statistics and Fourier analysis. The results demonstrate that a common thread links the Lanczos Derivative to a wide class of derivative extensions and, most importantly, to the usual derivative itself.