1014-Z1-1194   **Tim McDevitt*** (`mcdevittt@etown.edu`), Department of Mathematics, One Alpha Drive, Elizabethtown College, Elizabethtown, PA 17022. *Differentiating Noisy Data.* Preliminary report.

Although finite differences are frequently used to approximate derivatives, they are poorly suited to computing derivatives of noisy data acquired through measurement because they amplify the variance of the error due to noise. I will present a family of simple but effective FIR filters that can be used to quickly approximate derivatives of any order that minimize the variance of the noise while maintaining a specified discretization error. (Received September 27, 2005)