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On the Legendre-based filters of Persson and Strang. (English) Zbl 1415.93278

Summary: We consider the Legendre-based method of [IMA Vol. Math. Appl. 134, 301–315 (2003; Zbl 1049.93083)], P.-O. Persson and G. Strang and its modification for smoothing uniformly spaced data. The considered Legendre-based methods are numerically compared with the classical Savitzky-Golay method for filtering uniformly spaced data. We show how the Legendre-based filters can be extended to irregularly spaced data.

MSC:
93E14 Data smoothing in stochastic control theory
93E11 Filtering in stochastic control theory
65D10 Numerical smoothing, curve fitting
94A20 Sampling theory in information and communication theory

Keywords:
smoothing filter; Persson-Strang method; Savitzky-Golay method; uniformly spaced data; irregularly spaced data

Software:
Maple; Matlab

Full Text: DOI

References:

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