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Willi Freeden* (freeden@mathematik.uni-kl.de), Geomathematics Group, University of Kaiserslautern, 67663 Kaiserslautern, Germany. *From Fourier to Wavelets: A Geomathematical Course.*

A great deal of geomathematical work depends on methods for representing a georelevant phenomenon in terms of elementary, well-understood phenomena.

In this lecture we motivate the study of approximation techniques by indicating the circumstances in which a certain method may be useful and by describing some of the connections between areas of constructive approximation and various topics in geomathematics and –engineering. A central topic is the uncertainty principle. (Received September 12, 2012)