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**Christian Gerhards\*** ([gerhards@mathematik.uni-kl.de](mailto:gerhards@mathematik.uni-kl.de)), TU Kaiserslautern, Geomathematics Group, Germany. *Spherical Multiscale Methods and Applications in Geomagnetic Modeling.*

Quantities like the Earth's crustal magnetic field desire local modeling approaches on spherical geometries to improve the spatial resolution of magnetic anomalies. A multiscale method with locally supported wavelet kernels is a well-suited method for this purpose. The kernels can be constructed from regularizations of weakly-singular functions like the Green function for the Beltrami operator or the single layer kernel. In this talk we deal with such multiscale approaches and problems arising in their application. (Received September 22, 2011)