Modeling the earth magnetic field with wavelets using an iterative approach on local domains

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We built a global model of the earth magnetic field based on domain decomposition together with a local modeling based on wavelet frames. To deal with a large amount of measurements we stick together local solutions of the global field in an iterative process. The local functions we use to represent the solution are poisson wavelets. The aim is to build a high resolution model of the magnetic field of the earthin particular the crustal field of the earth.