



Figure 1: Model geometry and field orientations. The most common morphology for authigenic greigite is truncated octahedral. To avoid the high density of field orientations necessary near the sphere poles when using a regular grid, 500 random field orientations (arrows) were chosen from a uniform distribution over a sector of the unit sphere. The periodicity of the magnetocrystalline anisotropy and particle symmetry allow modelling of the effects of field orientations on only a sector of the sphere without loss of generality.