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Magnetostriction of Liquid Metals RISHI BHANDIA, JASON C. COOLEY, SETH D. IMHOFF, Los Alamos National Laboratory — The study of magnetic field-driven microstructural effects is in its infancy, but results have been promising. Previous work showed that these effects are easily observable in some systems, suggesting that magnetic fields could be used to control and engineer various micro-structural properties. The energy scales for crystallite rotation in the liquid and on the viscosity of the melt are known. However, the fundamental energy scale of the magnetic field interaction with the liquid and solid near the melting point is not. In this talk, we present magnetostriction data on liquid elements and alloys that will help us understand the energy scale of these processes and develop a theoretical understanding of solidification in magnetic fields.

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