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Ryan Murray* (rwm22@psu.edu), The Pennsylvania State University, McAllister building, State College, PA 16802. *Second-order Gamma-convergence for Cahn-Hilliard energies.*

The Cahn-Hilliard model is a classical model for microscopic phase transitions in materials, which serves as an important prototype of many phase transition problems in continuum mechanics. I will discuss some recent results regarding second-order Gamma-convergence of these models using a novel rearrangement technique. I will also discuss applications of these results to the study of metastable states for the Allen-Cahn equation, and current work extending these results to more physically realistic energies. This is joint work with Giovanni Leoni and Matteo Rinaldi. (Received September 14, 2018)