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**Second-order gamma limits for the Cahn-Hilliard functional with  
applications to slow motion of interfaces**

**Abstract**

The Cahn-Hilliard model offers one description of the motion of phase boundaries in a material. It is well-known that this model asymptotically approximates the perimeter functional within a domain. I will discuss some new asymptotic energy bounds, i.e. higher order gamma limits, for this functional in dimension  $n > 1$ . I will then discuss how these energy bounds can be used to quantify the slow motion of solutions to the Cahn-Hilliard and nonlocal Allen-Cahn equations. This is joint work with Giovanni Leoni and Matteo Rinaldi