Critical points of the Cahn-Hilliard Energy in a critical regime

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Abstract

The Cahn-Hilliard energy landscape on the torus is explored in the critical regime of large
system size and mean value close to –1. Existence and properties of a “droplet-shaped”
local energy minimizer and approximately-mountain-pass-type critical point are established.
The proofs employ the Γ-limit (identified in a previous work), quantitative isoperimetric
inequalities, and variational arguments. This is joint work with Alfred Wagner and Maria
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