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**Geometrically induced phase transitions**

**Abstract**

We focus on the impact of extreme geometry on the structure of local minimizers representing the transition between two different constant phases. We consider the case of dumbbell-shaped domains with a small constriction and general multi-well potentials. Our main results concern the existence and uniqueness of non-constant local minimizers, their full classification in the case of convex bulks, and the complete description of their asymptotic behavior, as the size of the constriction tends to zero.