

Anisotropic surface energies are a natural generalization of the perimeter functional that arise, for instance, in scaling limits for certain probabilistic models on lattices. This talk focuses on two recent results concerning isoperimetric problems with anisotropic surface energies. In the first part of the talk, we will discuss a weak characterization of critical points in the anisotropic isoperimetric problem (joint work with Delgadino, Maggi, and Mihaila). The second portion of the talk focuses on energy minimizers in an anisotropic variant of a model for atomic nuclei (joint work with Choksi and Topaloglu).