
KENNETH DEMASON, McMaster University

A Strong Form of the Quantitative Wulff Inequality for Crystalline Norms

The anisotropic perimeter is a natural functional appearing in the mathematical framework for determining equilibrium states of crystals in media. As with the usual isotropic perimeter there is an analogous anisotropic isoperimetric inequality, known as the Wulff inequality, where minimizers of the volume constrained anisotropic perimeter problem, known as Wulff shapes, are characterized. In view of statistical mechanics, almost-minimizers are the most likely observable states; as such their identification is just as important as that of the absolute minimizers. In this talk we will explore a recent result by the speaker which proves quantitative control on almost-minimizers in an H^1 sense when the Wulff shape is a polytope, an upgrade from the previous L^1 control via the so-called Fraenkel asymmetry.