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Nonlinear stability results for the nonlocal Mullins-Sekerka flow.

It has been recently shown that strictly stable critical configurations for the sharp interface Ohta-Kawasaki energy are in fact isolated local minimizers with respect to small L^1 -perturbations. After reviewing such results, we study the corresponding evolution problem and we show that such strictly stable configurations are exponentially stable for the $H^{-1/2}$ -gradient flow of the Ohta-Kawasaki energy, also known as the nonlocal Mullins-Sekerka flow.