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Stephen Philip Cameron* (scameron@math.uchicago.edu). *Lipschitz regularization for bounded fractional mean curvature flow*. Preliminary report.

The s -perimeter of a set E is given by the $\dot{W}^{s,1}$ norm of its characteristic function for $s \in (0, 1)$. The first variation of this functional gives the s -mean curvature H_s , the fractional, nonlocal analog of typical mean curvature. We show that if your initial surface is bounded between two hyperplanes, then after evolving for a fixed finite time under fractional mean curvature flow the surface becomes a Lipschitz graph. The proof is inherently nonlocal in nature, and in fact the theorem is false for classical mean curvature flow. (Received August 20, 2018)