

DIPARTIMENTO DI MATEMATICA - UNIVERSITÀ DI PISA

**NEW TRENDS IN PARTIAL DIFFERENTIAL EQUATIONS  
AND APPLICATIONS**

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**Examples of fractional minimal surfaces**

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We provide some explicit examples of nonlocal  $s$ -minimal surfaces for  $0 < s < 1$ , namely stationary for the  $s$ -perimeter functional, introduced first in the form of a singular integral, related to fractional Laplacian, by Caffarelli, Roquejoffre and Savin, which recovers the classical concept in the limit  $s \rightarrow 1$ . We find and analyze stability of a class of Lawson cones which shows important differences with the classical case. In addition we construct an axially symmetric analog of the catenoid in  $\mathbb{R}^3$  in the limiting case when  $s$  approaches 1.