

On a fractional Monge-Ampère operator

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Abstract

In this talk we consider a fractional analogue of the Monge-Ampère operator. Our operator is a concave envelope of fractional linear operators that are affine transformations of determinant one of a given multiple of the fractional Laplacian. We set up a relatively simple framework of global solutions prescribing data at infinity and global barriers. In our key estimate, we show that the operator remains strictly elliptic, which allows to apply known regularity results for uniformly elliptic operators and deduce that solutions are classical. This is a joint work with Luis Caffarelli.