NONLINEAR DIFFUSION WITH FRACTIONAL LAPLACIAN OPERATORS

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Abstract. Much recent research is taking place in the area of elliptic and parabolic equations, aimed at understanding the effect of replacing the Laplace operator, and its usual variants, by a fractional Laplacian operator or other similar nonlocal operators, which represent long distance interactions. Linear and nonlinear models are involved. The lecture will describe some of the progress made by the author and collaborators on the topic of nonlinear and fractional heat equations, studying the interaction between nonlinear diffusion and long-range effects.

References

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