

A priori Sobolev regularity for fully nonlinear parabolic equations

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Resumo/Abstract:

In this talk, we present sharp Sobolev estimates for (viscosity) solutions of fully nonlinear parabolic equations, under minimal, asymptotic, assumptions on the governing operator. Our argument unfolds by importing improved regularity from a limiting configuration - the recession function - along a path that touches our problem of interest. This machinery allows us, among other things, to impose conditions solely on the associated recession operator; from a heuristic viewpoint, integral regularity would be set by the behavior of the original operator at the infinity of $S(d)$. We conclude the talk discussing further implications of our main result; these include a comment on the so-called Escauriaza's exponent in the parabolic setting, a priori regularity in $p - BMO$ spaces, and applications to the Kähler-Ricci flow.

This is joint work with Ricardo Castillo (PPGM-UFSCar).