

Further time regularity for parabolic equations

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Abstract

In contrast with second order parabolic equations, a particular feature of nonlocal models is the loss of time regularity. Even for the fractional heat equation a sudden change in time of the boundary data (over the complement of the domain) gets immediately noticed by the nonlocal term and usually creates a discontinuity for the time derivative of the solution. Together with D. Kriventsov, we established a priori Schauder estimates for nonlocal, fully nonlinear parabolic equations, addressing the regularity of the time derivative of the solution under mild assumption on the boundary data. Our result extend to new estimates for second order equations.