



# SEMINÁRIO DE EQUAÇÕES DIFERENCIAIS

**Sharp regularity for a singular fully nonlinear parabolic free  
boundary problem**

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**Resumo:** This work establishes sharp local regularity estimates for viscosity solutions of fully nonlinear parabolic free boundary problems with singular absorption terms. The main difficulties are due to the blow-up of the source along the free boundary and the lack of a variational structure. The proof combines the power of the Ishii-Lions method with intrinsically parabolic oscillation estimates. The results are new, even for second-order linear operators in nondivergence form.

Joint work with Damião J. Araújo (UFPB, JP, Brazil) and José Miguel Urbano (KAUST, Saudi Arabia)