NEUMANN PROBLEM FOR A CLASS OF DOUBLY EQUATIONS FOR THE 1–LAPLACIAN.

ALEXIS MOLINO

Abstract. This talk is concerned with the Neumann problem for a class of doubly nonlinear equations for the 1-Laplacian,

$$\frac{\partial v}{\partial t} - \Delta_1 u \ni 0 \text{ in } (0,\infty)\times\Omega, \quad v \in \gamma(u),$$

and initial data in $L^1(\Omega)$, where Ω is a bounded smooth domain in $\mathbb{R}^N$ and γ is a maximal monotone graph in $\mathbb{R}\times\mathbb{R}$. We prove that, under certain assumptions on the graph γ, there is existence and uniqueness of solutions. Moreover, we proof that these solutions coincide with the ones of the Neumann problem for the total variational flow. We show that such assumptions are necessary.

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