

# Nonlinear diffusion in transparent media

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## Abstract.

In this talk, we will discuss about some recent results concerning nonlinear diffusion in transparent media. The focus will be the study of the Dirichlet problems associated to some elliptic and parabolic PDEs whose diffusion term takes the form

$$\operatorname{div} \left( u^m \frac{Du}{|Du|} \right),$$

with  $m \in ]-\infty, +\infty[$ . We will present existence and uniqueness results of entropy solutions and some qualitative properties of them. This is a work in progress in collaboration with L. Giacomelli and F. Petitta (SBAI, Università di Roma I, “La Sapienza”).