SINGULAR ELLIPTIC EQUATIONS WITH MEASURE DATA

At first we recall some definitions and basic tools regarding measures and capacities. Then we study the existence of a solution to the following nonlinear elliptic boundary value problem with a general singular lower order term whose model is

$$\begin{cases} -\Delta u = H(u)\mu & \text{in } \Omega, \\ u = 0 & \text{on } \partial\Omega, \\ u > 0 & \text{on } \Omega, \end{cases}$$

where Ω is an open bounded subset of $\mathbb{R}^N$, μ is a nonnegative bounded Radon measure on Ω and H is a continuous positive function outside the origin such that $\lim_{s\to 0^+} H(s) = +\infty$. We do not require any monotonicity property on the singular function H (joint work with L. M. De Cave).