# Seminário de Análise

# On positive solutions for a class of quasilinear elliptic equations

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**Abstract**. In this talk we consider the following quasilinear elliptic equation:

$$\begin{cases} -\Delta u - \kappa \Delta(u^2)u = \lambda u - b(x)u^p & \text{in} \quad \Omega, \\ \qquad\qquad u = 0 & \text{on} \quad \partial\Omega, \end{cases} \qquad (\mathcal{P}_\kappa)$$

where $\Omega \subset \mathbb{R}^N$ ($N \geq 1$) is a smooth bounded domain, $p > 1$ is a constant, $\kappa$ and $\lambda$ are positive parameters and the weight function $b(x)$ satisfies certain regularity conditions.

We present results of existence, nonexistence and uniqueness of positive solutions. We also analyze the behavior of these solutions with respect to the parameters $\kappa$ and $\lambda$. The proof of our main results relies on bifurcation techniques, the sub- and supersolution method and a construction of an appropriate large solution.

Joint work with U. Severo (UFPB) and E. Medeiros (UFPB).