Global existence for some reaction-diffusion systems with nonlinear diffusion

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Abstract : In this talk, we present new results concerning global existence for some reaction-diffusion systems of the type

$$\begin{cases} u_t - \Delta u^m &= f(u,v) & \text{in }]0,+\infty[\times\Omega \\ v_t - \Delta v^p &= g(u,v) & \text{in }]0,+\infty[\times\Omega \\ u(t,.) = v(t,.) &= 0, & \text{on }]0,+\infty[\times\partial\Omega, \\ u(0,.) = u_0(.) \geq 0\ ,\ v(0,.) &= v_0(.) \geq 0 & \text{in } \Omega \end{cases}$$

where Ω is a bounded open subset of $\mathbb{R}^N$ with a regular boundary, u_0, $v_0 \in L^1(\Omega)$.

This is joint work with Michel Pierre (ENS de Rennes).