

Uniform a priori estimates for the Lane-Emden system in the plane

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We prove that positive solutions of the superlinear Lane-Emden system in a two-dimensional smooth bounded domain are bounded independently of the exponents in the system, provided the exponents are comparable. As a consequence, the energy of the solutions is uniformly bounded, a crucial information in their asymptotic study. On the other hand, the boundedness may fail if the exponents are not comparable, a surprising incidence of a situation in which the sub-critical Lane-Emden system behaves differently from the scalar equation. Joint work with Nikola Kamburov (PUC-Chile).

In Special Session 28 on Recent Trends in Nonlinear Elliptic PDEs at the Mathematical Congress of the Americas 2025.