

Asymptotic analysis and sign-changing bubble towers for Lane-Emden problems

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Let Ω be a smooth bounded domain of \mathbb{R}^2 . We consider the semilinear Lane-Emden problem

$$\begin{cases} -\Delta u = |u|^{p-1}u & \text{in } \Omega \\ u = 0 & \text{on } \partial\Omega \end{cases} \quad (\mathcal{E}_p)$$

where $p > 1$. We analyze the asymptotic behavior of sequences of solutions $(u_p)_p$ of (\mathcal{E}_p) when the exponent p of the nonlinearity tends to infinity. The results are obtained in collaboration with F. De Marchis (Roma Tor Vergata) and F. Pacella (Roma Sapienza).