Dependence of positive solutions on functional parameters for a certain class of elliptic problems

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We discuss the following class of elliptic semilinear equations $\triangle u(x)+F(x,u(x),v(x))+g(x)x\cdot\nabla u(x)=0$, for $x\in\Omega_R=\{x\in\mathbb{R}^n,||x||>R\}$, $n>2$ with the condition $u(x)=\Theta(||x||^{2-n})$ as $||x||\to+\infty$. The goal of the talk is to present results concerning the existence of solutions of our problem and their dependence on functional parameters v from a subset V of a certain Hölder space. The latter result will be obtained in the case of the lack of uniqueness of a solution. We will formulate conditions guaranteeing that for each parameter from V, our problem possesses a nondecreasing sequence of solutions with finite energy.

References

[1] A.Orpel, *Dependence of positive solutions on functional parameters for a class of elliptic problems*, Periodica Mathematica Hungarica 91, 505–516 (2025)

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