

Singular elliptic equations with $(p(z), q(z))$ -growth

Witold Majdak and Nikolaos S. Papageorgiou

We consider the following singular Dirichlet problem driven by a variable unbalanced growth differential operator and a singular reaction with an unbounded coefficient:

$$-\Delta_{p(z)}^\alpha u(z) - \Delta_{q(z)} u(z) = \frac{f(z)}{u(z)^{\eta(z)}} \quad \text{in } \Omega, \quad u|_{\partial\Omega} = 0, \quad u > 0. \quad (1)$$

The exponent $\eta \in C(\overline{\Omega})$ is assumed to satisfy $\eta(z) < 1$ only near $\partial\Omega$. We prove that this problem admits a unique bounded solution. Our talk is based on the results presented in the recently published article [1].

References

- [1] W. Majdak, N.S. Papageorgiou, *Singular elliptic equations with $(p(z), q(z))$ -growth*, J. Fixed Point Theory Appl. **28** (2026), 57.

First Author: Witold, Majdak

Affiliation: *Faculty of Applied Mathematics, AGH University of Krakow
30-059 Krakow, Poland*

e-mail: majdak@agh.edu.pl

Second Author: Nikolaos S., Papageorgiou

Affiliation: *Department of Mathematics, National Technical University
Athens 15780, Greece*

e-mail: npapg@math.ntua.gr