National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Superlinear and Sublinear Dirichlet problem with the (p(y),q(y))-Laplacian Operator
Speaker	: Akanksha Kesarwani
Supervisor	: Akanksha Kesarwani
Venue	: Seminar Hall, Departement of Mathematics
Date and Time	: 16 Jul 2024 (11.00 AM)
Abstract	: We study the following nonlinear elliptic problem involving the (p(y),q(y))-Laplacian Operator: - div(a(y)|▯▯v|p(y)-2 ∇v) + b(y)|v|p(y)-2 v - div(|▯▯v|q(y)-2 ∇v) = g(y,v) y ϵ Ω, v = 0 on ▯▯Ω, where Ω ⊂ ▯▯▯▯ is a smooth bounded domain, 1 < q(y) < p(y) < n. The functions a, b ϵ L∞(Ω) and a(y) ≥ a0 > 0, b(y) ≥ b0 > 0 for all y ϵ Ω. We prove the existence of weak solutions in ▯▯01,▯▯(▯▯)(Ω) for the superlinear case g(y,v) = h(y) vβ(y), p(y) – 1 < β(y) < p*(y) – 1, and sublinear case g(y,v) = f(y) vα(y), 0 ≤ α(y) < q(y) < p(y) – 1, by using the Mountain Pass Theorem.