National Institute of Technology Rourkela

Progress Seminar

Seminar Title	: A study on nonlinear elliptic problem in Orlicz Sobolev spaces
Speaker	: Subhashree Sahu (Rollno : 522ma6008)
Supervisor	: Jugal Mohapatra
Venue	: Seminar Room, MA dept
Date and Time	: 01 Apr 2025 (04.30 PM)
Abstract	: Nonlinear elliptic partial differential equations naturally arise in various disciplines, including engineering, geometry, materials science, physics, and topology. This seminar examines an elliptic problem within the setting of abstract function spaces. Specifically, we investigate a Robin boundary value problem involving the Orlicz &psi-Laplace operator, incorporating a general nonlinear term alongside a singular component. Utilizing variational methods combined with a suitable truncation technique, we establish two multiplicity results that provide sign information for all solutions. The first result ensures the existence of at least two nontrivial solutions with a prescribed sign, while the second, based on the Symmetric Mountain Pass Theorem, demonstrates the existence of infinitely many nodal solutions. Our analysis is conducted within a comprehensive and abstract framework corresponding to Orlicz&ndashSobolev function spaces.