National Institute of Technology Rourkela

Progress Seminar

Seminar Title	: q-Laplacian State Transfer on Graphs with Involutions
Speaker	: Swornalata Ojha (Rollno : 523ma1002)
Supervisor	: Hiranmoy Pal
Venue	: Seminar Room, Department of Mathematics.
Date and Time	: 22 Sep 2025 (5:00 PM)
Abstract	: Let G be a finite, simple, and undirected graph with the q-Laplacian matrix L. The existence of state transfer is investigated with respect to the q-Laplacian matrix of graphs equipped with a non-trivial involution. It is shown that the occurrence of perfect state transfer between certain pair (or plus) states in such graphs is equivalent to the existence of vertex state transfer in a subgraph induced by the involution. This leads to infinite families of trees with potentials and unicyclic graphs of maximum degree three that exhibit perfect pair state transfer. In particular, vertex and pair state transfer are analyzed in edge-perturbed complete bipartite graphs, cycles, and paths with potentials restricted to the end vertices.