National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: Energy-based Carbon Emissions Diversities among Indian Regions: Insights from Causation and Spatial Dependencies
Speaker	: Aksita Pattnaik (Rollno : 522hs2003)
Supervisor	: Prof. Bikash Ranjan Mishra
Venue	: Room No. MN - 436, Seminar Room, HS Department, Near Lift, Third Floor, Academic Building, NIT Rourkela
Date and Time	: 22 Jan 2025 (04:30 PM)
Abstract	: India, as a rapidly developing nation, ranks among the world&rsquos top carbon emitters. Balancing economic growth with environmental sustainability is a critical challenge, particularly given the country's significant regional disparities in socio-economic and environmental attributes. Understanding the regional dynamics of carbon emissions is essential in formulating effective, targeted mitigation strategies. Existing studies have largely overlooked the spatial interdependencies and spillover effects that significantly shape emissions patterns across sub-national regions. This research aims to address four objectives: estimating energy-use intensity carbon emission intensity across sub-national regions, exploring the disparities among Indian states through convergence analysis of these intensities, investigating the impact of regional-specific factors on regional-level carbon emissions, and evaluating the spatial dependencies and spillover effects of regional characteristics on carbon emissions across regions. The IPCC (2006) methodology will address the estimation of carbon intensity and energy intensity. Club convergence analysis will explore the convergence patterns, while Moran's I will identify spatial dependency. The Spatial Durbin Model will analyse spillover effects. The findings will substantiate region-specific climate policies, enabling a more equitable distribution of mitigation measures aligned with India&rsquos diverse socio-economic landscape.

Keywords: Regional Carbon Emissions, Convergence hypothesis, Spatial Econometrics.