National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Conference Return Seminar: Identification of SW-GW Interaction Pattern in Coastal Agricultural Region
Speaker	: Shubhshree Panda (523ce1001)
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Venue	: CE Seminar Hall
Date and Time	: 23 Jan 2025 (11:00 am)

Abstract : Understanding coastal agricultural settings surface water-groundwater interaction patterns rests on effective strategies in water resources management especially where agriculture is reliant on both. Factors influencing the interaction in-between surface and sub-surface water include rainfall, temperature, GWL and also runoff which in these regions tend to influence. Therefore, the present study has implemented deep learning (DL) model, long-short-term memory (LSTM) neural network for the identification of SW-GW interaction. One of the aims of this study is to ascertain the degree of success of the DL model in the identification of interaction pattern in the coastal agricultural region of Puri, Odisha. With the use of a diverse set of datasets and hydrological and meteorological data the analysis focuses on to the SW-GW dynamics of the region. The findings also demonstrated that the LSTM model could be used for predicting potential interaction patterns with high accuracy. This model is important for formulating appropriate water resource management plans for enhancing agricultural sustainability while also lessening the negative effect of salinization. The study concludes that advanced machine learning models, particularly the deep learning model LSTM, hold significant physical relevance in complex SW-GW interactions in coastal agricultural regions for more informed decision-making in water resource management.