National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Conference Return Seminar: Methodology for simulating crack propagation in concrete dams
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Venue	: Civil Engineering Seminar Hall
Date and Time	: 22 Oct 2024 (10:00 AM)
Abstract	: This paper presents an extensive methodology that integrates insights from several referenced studies and is currently used to simulate crack propagation in concrete dams. It emphasizes the fusion of advanced computational techniques with empirical data to precisely model crack behaviour. Notably, the Extended Finite Element Method (XFEM) is highlighted for its efficacy in simulating crack growth, particularly under dynamic loads like seismic events. The methodology encompasses meticulous geometric modelling, determination of material properties, and consideration of boundary conditions and loads. Calibration against experimental data ensures the fidelity of the simulations, while sensitivity analyses probe the impact of crucial parameters on crack propagation. This comprehensive approach enhances comprehension of concrete dam behaviour and facilitates the formulation of effective maintenance and safety strategies.