

## ***“Numerical Modeling of Various Coastal Processes”***

### **Abstract**

The goal of this project is to measure the impact of tsunamis and storm surges along the coastal belts of the Indian Ocean. The vertically integrated, depth-averaged shallow water equations will be solved numerically within the model domains using both finite difference and finite element techniques.

Real-time tsunami and storm surge modeling is a challenging and essential task for developing effective warning systems. Numerical modeling provides a reliable method for understanding tsunami and storm surge behavior and forecasting their impacts on coastal areas. The outcomes of this study will contribute to early warning systems that can help minimize the loss of life and property.