Contribution ID: **416** Type: **Poster Presentation**

Contaminant Transport Modelling using FEFLOW in Eastern Coastal State of India

Wednesday, 21 May 2025 10:05 (1h 30m)

Groundwater, while abundant, remains highly susceptible to contamination from industrial effluents, improper waste disposal, and excessive agricultural fertilizer use. In recent years, the improper application of nitrogen-based fertilizers has significantly contributed to nitrate contamination in the groundwater systems of eastern coastal India. This study focuses on two vulnerable regions in Odisha to analyse contaminant transport mechanisms and aquifer dynamics. Utilizing input parameters, shapefiles, and borewell datasets, we employed FEFLOW software to simulate and visualize the three-dimensional movement of nitrate contaminants over a 50-year period. The results indicate a notably faster contaminant migration in Sundargarh compared to Sambalpur, primarily due to differences in aquifer disposition and fertilizer application practices. This research provides critical insights for optimizing fertilizer management strategies and implementing sustainable water resource management practices to ensure safe, nitrate-free drinking water in the region.
Keywords: Modelling, transport, nitrate, contamination, and FEFLOW.

Country

India

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References

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Session Classification: Poster

Track Classification: (MS10) Advances in imaging porous media: techniques, software and case studies