



**Department of Environment,
Planning and Sustainability**
Faculty of Social Sciences
Bar-Ilan University



As part of the Earth Science
Program Colloquium, we are
honored to host a special lecture by:

Prof. Linto Alappat

*Dept. of Geology and Environmental Science,
Christ College Autonomous, Kerala, India*

Chronology of marine terrace sediments at the coasts of south India - Implications on palaeo-shoreline and high energy events

Late Pleistocene–Holocene coastal deposits along the coasts of South India preserve valuable records of palaeo-shoreline dynamics, depositional environments, and tectonic evolution. Stratigraphic sections from both regions reveal alternating cross-laminated quartzitic conglomerate with sandy lenses, capped by aeolian sands, and underlain by cemented coarse sand and gravel rich in marine molluscan fauna. The fossil assemblages, dominated by diverse gastropods and bivalves indicate upper shoreface to foreshore depositional settings. OSL and radiocarbon dating constrain multiple phases of coastal sedimentation- 44–40 ka (MIS 3), 23–12 ka (Late Pleistocene regression), and ~10–3 ka (Holocene transgression)- revealing alternating marine and aeolian units associated with glacio-eustatic sea-level oscillations and late Quaternary tectonic uplift/subsidence.

A comparative analysis of live (LA), dead (DA), and fossil (FA) bivalve assemblages demonstrates strong fidelity between LA and DA, while FA shows distinct composition with reduced diversity, suggesting significant post-mortem transport and selective preservation. The compositional divergence and evidence for thick-shelled species enrichment indicates high-energy reworking by tropical cyclones or tsunami events. These results collectively highlight the complex interplay of sea-level fluctuations, coastal tectonics, and extreme-event sedimentation in shaping the Late Quaternary coastal stratigraphy of South India, providing critical insights into palaeoenvironmental reconstruction and modern coastal vulnerability.

| 19.11.25 | 16:00 | Mexico Bldg. 213, 3rd floor, Seminar Room 320 |
Fine refreshments will be served

**Earth Science Program, Dept. of Environment, Planning & Sustainability;
Faculty of Social Sciences | Bar-Ilan University | Ramat-Gan | Israel**