

## ABSTRACT

### **Research Theme: Paleoclimate and Geochemical studies on the sediment cores from the Cauvery delta region**

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The main aim of my research is to build up the Quaternary climatic history of the Cauvery delta region, study the vegetation changes and also to study the chemical changes brought in the sediment due to diagenesis. The parameters being studied are the pollens to infer the paleoclimate and vegetation changes; the exchangeable cations in the sediments associated with the different secondary phases namely, soluble, organic, carbonate, Fe-Mn oxyhydroxides and residual to understand the effect of diagenesis on element mobility and redistribution.

Palynological studies on the sediment cores collected from the Cauvery delta region will help us to quantitatively assess the changes in vegetation composition and climate as recorded in sediment cores that have reasonable chronological controls, using radiometric carbon and OSL methods.

The initial chemistry of the sediments, other than factors like provenance, is also determined by climate which controls the weathering and mineral breakdown in the rocks. In this work we will also consider the inter-relationship between climate and the chemistry of the sediments. Further we will try to decouple the changes induced in the chemistry of the sediments by climate from that due to the diagenesis.

There have been hardly any studies on cores or sections of the Quaternary sediment from the Cauvery delta region. In this work it is intended to develop taxonomy for the plant macro- and microfossil species using palaeobotanical and palynological tools. A floristic distributional database through time will be developed using consistent taxonomic nomenclature. This floristic and faunal evidence will be integrated with sedimentological and geochemical evidence of depositional regimes.