Seminar Announcement

Speaker: Purba Das

Affiliation: Chennai Mathematical Institute

Date: 6th April, 2018

Time: 2:00pm - 3:00pm

Venue: Indian Statistical Institute, 110 Nelson Manickam Road, Aminjikarai, Chennai.

Title: Understanding Sea Ice Melting via Functional Data Analysis

Abstract:
In this article, we considered the problem of sea ice cover is melting. Considering the 'satellite passive microwave remote sensing data' as functional data, we studied daily observation of sea ice cover of each year as a smooth continuous function of time. We investigated the mean function for the sea ice area for following decades and computed the corresponding 95% bootstrap confidence interval for the both Arctic and Antarctic Oceans. We found the mean function for the sea ice area dropped statistically significantly in recent decades for the Arctic Ocean. However, no such statistical evidence was found for the Antarctic ocean. Essentially, the mean function for sea ice area in the Antarctic Ocean is unchanged. Additional evidence of the melting of sea ice area in the Arctic Ocean is provided by three types of phase curve (namely, Area vs. Velocity, Area vs. Acceleration, and Velocity Vs. Acceleration). In the Arctic Ocean, during the summer, the current decades is observing the size of the sea ice area about 30% less, than what it used to be during the first decade. In this article, we have taken a distribution-free approach for our analysis, except the data generating process, belongs to the Hilbert space.

Regards,

Seminar Coordinator.