

Speaker : Nandini Kannan

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Date : January 22nd, Wednesday

Time : 4:30pm - 5:30pm

Venue : Indian Statistical Institute (ISI), Chennai Centre

SETS (Society for Electronic Transactions and Security),

MGR Knowledge City, CIT Campus, Taramani.

(Landmark: Near IITM Research Park/ Ginger Hotel)

Title : Step-stress models with an immune fraction

Abstract: In reliability or survival analysis, researchers are often interested in the effects of different stress levels such as temperature, voltage, dose etc. on the lifetimes of experimental units. Accelerated testing allows the experimenter to increase these stress levels to obtain information on the parameters of the life distributions more quickly than would be possible under normal operating conditions. A special class of accelerated tests is the class of step-stress tests which allow the experimenter to increase the stress level at fixed times during the experiment. In this talk, we consider step-stress models assuming different parametric forms for the hazard function and allowing for the presence of an immune population. The immune population represents resistant items that are not affected by the stress. We adapt the cumulative exposure model discussed by Nelson and obtain the MLE's of the parameters. The model is fit to some data on altitude decompression sickness.