

## ABSTRACT

### **Some Research Problems in Stochastic Processes**

We first give an introduction of research problems in modern probability and stochastic processes. We talk on two related problems, in particular. A general stochastic process, called a workload process, based on a Poisson random measure is constructed and weak convergence theorems are proved. In the second part of the talk, we study the probability law of a random variable which is defined as a function of a certain type of workload process.