### **Seminar of Probability and Stochastic Process**

Tuesday, 26th March, from 11h15 to 12h00 <u>CM 011</u>, EPFL, Ecublens

## **Prof. Serguey Foss**

#### Heriot-Watt University (UK)

# Stochastic sequences with a regenerative structure that may depend both on the future and on the past

## Abstract:

Many regenerative arguments in stochastic processes use random times which are akin to stopping times, but which are determined by the future as well as the past behaviour of the process of interest. Such arguments based on "conditioning on the future" are usually developed in an ad-hoc way in the context of the application under consideration, thereby obscuring underlying structure. In this paper we give a simple, unified and more general treatment of such conditioning theory. We further give a number of novel applications to various particle system models, in particular to various flavours of contact processes and to infinite-bin models. We give a number of new results for existing and new models. We further make connections with the theory of Harris ergodicity.

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