ID de Contribution: **6** Type: **Non spécifié**

Stochastic control for medical treatment optimization

vendredi 5 avril 2024 09:45 (45 minutes)

We are interested in monitoring patients in remission from cancer. Our aim is to detect their relapses as soon as possible, as well as detect the type of relapse, in order to decide on the appropriate treatment to be given. Available data are some marker level of the rate of cancerous cells in the blood which evolves continuously but is measured at discrete (long) intervals and through noise. The patient's state of health is modeled by a piecewise deterministic Markov process (PDMP). Several decisions must be taken from these incomplete observations: what treatment to give, and when to schedule the next medical visit. The results will be illustrated by simulations calibrated on a cohort of a clinical trial on multiple myeloma provided by the Center of Cancer Research in Toulouse.
This is a joint work wih Alice Cleynen (IMAG), Orlane Rossini (IMAG), Régis Sabbadin (Inrae MIAT) Aymar Thierry d'Argenlieu (IP Paris), Amélie Vernay (IMAG) within ANR HSMM-INCA

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