Filtering Problems with Cox-Jump-Processes

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Filtering problems are often solved by constructions of certain measure changes.

Such attempts were already fruitful, dealing with general jump-processes but they involve strong integrability assumptions.

In this presentation, we will firstly show that for a specific class of jump-processes, namely the Cox-processes, one can morally disregard any kind of assumption.

Secondly, we will apply it to an easy filtering problem, including an Ornstein-Uhlenbeck type process.

Finally, an explicit formula will be presented (up to calculating integrals).