ATELIER « SYSTÈMES STOCHASTIQUES DE PARTICULES EN INTERACTION »
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WORKSHOP "INTERACTING STOCHASTIC PARTICLE SYSTEMS"
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Realizability of Point Processes

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Typically, one computes starting from a given interaction the correlation functions of a system. A natural question is if on can reconstruct from the correlation functions the underlying interaction. If all correlation functions are given this is actually possible. But what happens if only some of the correlation functions are known. Which information about the point processes can be obtained ? I will explain that the problem is a non-linear infinite dimensional moment problem and give a general existence result. Unfortunately, this general result is of limited use and I will present different more special approaches to the problem and explain possible applications.