Computing rare events: adaptive multilevel splitting algorithms

Simonnet Eric¹, Rolland Joran¹

1 : Institut Non Linéaire de Nice Sophia-Antipolis (INLN) Université Nice Sophia Antipolis [UNS]CNRS : UMR7335 1361 route des Lucioles Sophia Antipolis 06560 Valbonne http://www.inln.cnrs.fr/

Adaptive multilevel splitting algorithms offer new and efficient ways to compute transitions between metastable states in various contexts. After showing simple examples, we describe recent theoretical results which give better insight on the statistical properties of these algorithms. We show in particular that in dimension higher than 1 and in the weak noise limit, the use of proper observables becomes critical.