Weak approximation of stochastic differential equations

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The work focussed on weak approximation of stochastic differential equation and develop a method of computing solutions of Langevin dynamics using variable stepsize. The method assume a knowledge of the problem allowing to establish a good 'monitor function' which locates points of rapid change in solutions of stochastic differential equations. Using time-transformation we show that it is possible to integrate a rescaled system using fixed-stepsize numerical discretization effectively placing more timesteps where needed.