

# Parallel execution of an integral approach of the passage to the security derivative that it fixes the price Ltd world of supercomputers of the quádrico we we use an integral approach of the passage

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Parallel execution of an integral approach of the passage to the security derivative that it fixes the price Ltd world of supercomputers of the quádrico we we use an integral approach of the passage deciding the underlying random equations shape financier to fix the price derivative of the security. The integral methodology of the passage is known well in the field of mechanics of quantum and defines values of the expectation as integral exceeding functionaries or histories of the additions (passages) of quantum or the random dynamic system. Such integrals are a limit of the sequence of the finite–dimensional multiple integrals gotten discretizing the interval of the time under the consideration, that corresponds to the time to the expiration in the box of derivatives financial. Essentially, a continuous random process is specified by its density of the functional probability better that for its law of the evolution (a random distinguishing equation, SDE). The formula of Feynman–Kac guarantees the equivalence of the two formulations. Known mount numerical Carlo well (MC) and methods quasi of Monte Carlo (QMC) for the calculation of conditional values of the expectation in random processes is seen as devices normally generating appropriate random passages of the excess of the averages. In the structure of the integral approach of the passage discretized of the density of the probability is needed to generate appropriate functions multivariate. When MC and QMC will be essentially the only existing numerical methods for the raised dimensional problems (that they correspond to derivatives with many seguranças underlying), suffer from the slow properties of the convergence. In the example of low dimensional problems many techniques are available, based in integrating for differencies finite partial the distinguishing equation (PDE) that it corresponds to the SDE in the hand or a simplified drástica assumption in the probabilities of the transistion (that is methods binomial). We use an alternative method for the numerical computation of formulation integral of the passage of the random financial problem that is elegant, easy to extend for options passage–dependents and Americans,

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amenable to a parallel execution and with good properties of the convergence and the stability. The numerical method deterministic of the green function (GFDNM) trusts approaching the probabilities of the transistion for the stages discretized of the time, and computing the integrals for the numerical quadrature standard on a grating discretized. In the fact, the probability of the transistion represents the green function of the PDE that corresponds to the underlying SDE the evolution of the financial security. The conditional values of the expectation are simply products of the vector of payoff for one determined number of matrices of the transistion.  
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