

*On the construction of explicit exponential-based schemes for stiff Stochastic Differential Equations*

**Hugo de la Cruz** (FGV-Fundação Getulio Vargas)

Currently there are diverse discretization methods for stochastic differential equations (SDEs) having in common the explicit use of exponentials in obtaining an approximate solution. However, the majority of them have been designed for semi-linear SDEs and hence, in different cases, their numerical implementation is not always feasible or is of limited use when applied to general stiff SDEs. In this work we consider a computational feasible alternative for constructing stable exponential-based numerical schemes for the computational integration of multidimensional non-autonomous stiff SDEs. A comparative study with other exponential methods is presented, showing the benefits of the schemes proposed in relation to these ones.