

Euler-like numerical schemes for Caputo fractional differential equations: deterministic and stochastic

Peter Kloeden, University of Tuebingen

Explicit and implicit Euler schemes are formulated for Caputo fractional differential equations (for short Caputo FDEs) of order $\alpha \in (0,1)$ whose vector fields satisfy a standard Lipschitz continuity condition in the state variable and a Hölder continuity condition in the time variable. The convergence rates of these schemes are given investigated. Stochastic counterparts are also considered. The corresponding equations do not satisfy the Itô formula