

# ON A STRUCTURE-PRESERVING NUMERICAL METHOD FOR FRACTIONAL FOKKER-PLANCK EQUATIONS

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ABSTRACT. In this talk, we introduce and discuss a numerical scheme for the Lvy-Fokker-Planck equation. After dealing with the continuous case, I will present the discretizations adopted, designed to preserve the main features of the continuous model such as conservation of mass, heavy-tailed equilibrium and hypocoercivity properties. New tools of discrete functional analysis will be then necessary in order to perform a thorough analysis of the numerical scheme and show exponential stability. We will illustrate our theoretical findings with numerical simulations. This talk is based on joint work with Maxime Herda, Hlne Hivert and Isabelle Tristani.