

Second Workshop on Fractional Calculus, Probability and Non-local Operators: Applications and Recent Developments

BCAM Course on Fractional Kinetics: Analytic and Probabilistic Approaches
PhD/PostDoc level

BCAM-Basque Center for Applied Mathematics

Mazarredo 14, 48009 Bilbao, Basque Country, Spain

November, Monday 10th - Friday 14th

Monday 10th - Wednesday 12th (Mon 11:30-13:30 / 15:00-19:00; Tue 9:00-12:00 / 15:00-16:00 / 17:00-19:00 ; Wed 9:00-12:00 / 15:00-18:00)
Thursday 13th - Friday 14th (Thu, Fri 9:30-12:00 / 15:00-17:30)

Research on non-local operators and related stochastic processes has witnessed a rapid expansion over the past years. These problems pose new challenges to both pure and applied mathematicians, at the interface of at least three wide fields: functional analysis, stochastic processes and partial differential equations, while providing a new paradigm in scientific modelling. Applications range from relativistic models of quantum physics and quantum field theory, to sub-diffusion experimentally observed in molecular physics, from anomalous transport in cells to leptokurtic price distributions in financial markets, or to long-range dynamics ranging from the nano-scale to the geophysical scale. This interaction between mathematics and applications is giving rise to new concepts and methods, and it will produce new challenging mathematical problems for many years to come.

Lecturers:

Vassili KOLOKOLTSOV, University of Warwick, UK

Jozsef LÖRINCZI, Loughborough University, UK

Enrico SCALAS, University of Sussex, UK

Invited Talks:

Luisa BEGHIN, University "La Sapienza" Rome, Italy

Stable processes at Poisson times in connection with the fractional shift operator

Kamil KALETA, University of Warsaw, Poland

Lévy processes with uniformly dominated sequences of jumps

Joseba MENDIGUREN, Mondragon University, Spain

Fractional Calculus application on mechanical engineering problems

Paolo PARADISI, ISTI-CNR Pisa, Italy/BCAM, Spain

Stochastic processes for space-time fractional diffusion

Juan Luis VAZQUEZ, Autonomous University of Madrid, Spain

Nonlinear diffusion with fractional Laplacian operator

For registration write to fcplno@gmail.com, no registration fee is required.

