The Time-Fractional Cauchy Problem

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Time-fractional PDEs have proven useful in various situation where classical models fail to capture memory effects, anomalous diffusion, or power-law dynamics. Applications arise across physics and engineering, biology, finance and economics. This talk will provide a first introduction to time-fractional PDEs, with emphasis on the abstract Cauchy problem of the form $\partial^\alpha u(t) = f(t, u(t)) - Au(t)$, where f satisfies a second variable local Lipschitz condition and A being a linear - possibly unbounded - Operator, generating a C_0-semigroup.

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