1139-35-325 **Agnid Banerjee** and **Nicola Garofalo***, nicola.garofalo@unipd.it. *Space-time strong unique continuation for nonlocal parabolic equations.*

In two visionary papers in 1938 and 1949 Marcel Riesz introduced the fractional powers of the Laplacian in Euclidean and Lorentzian space, developed the calculus of these nonlocal operators and studied the Dirichlet and Cauchy problems for respectively the fractional Laplacian and the wave equation. He also mentioned, but did not include in his study, the fractional heat equation.

In this talk I will present a new result on the strong unique continuation property, backward in time, for zero-order perturbations of the nonlocal heat equation: $(D_t - \Delta)^s u = Vu$ for $0 < s < 1$. To prove the main result we develop the regularity theory of the extension problem for the nonlocal equation. With such theory in hands we establish a basic monotonicity result for an adjusted frequency function.

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