Contribution Title:	THE HARDY INEQUALITY AND THE ASYMPTOTIC BEHAVIOUR OF THE HEAT EQUATION IN TWISTED DOMAINS
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In this talk we revise a recently established Hardy inequality in twisted quantum waveguides on the background of transience of the Brownian motion. We begin by recalling the classical Hardy inequality and its relation to geometric, spectral, stochastic and other properties of the underlying Euclidean space. After discussing the complexity of the problem when reformulated for quasi-cylindrical subdomains, we focus on the prominent class of tubes. As the main result, we show that the geometric deformation of twisting yields an improved decay rate for solutions of the heat equation in three-dimensional tubes of uniform cross-section. This is a joint work with Enrique Zuazua.