Superdiffusion, diffusion and hydrodynamics in XXZ spin chains

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In this talk, I will explain how the recently introduced framework of generalized hydrodynamics combined with Gaussian fluctuations can elucidate the nature of finite-temperature spin transport in XXZ spin chains. I will discuss how spin diffusion can coexist with ballistic energy transport, and provide a simple intuitive picture that leads to an exact calculation of the spin diffusion constant. I will also comment on the isotropic limit which shows spin superdiffusion with an anomalous exponent $z = 3/2$.

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