

# Hölder regularity and local limit theorem for random conductance models with long-range jumps

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In this talk we consider continuous time random walks on  $\mathbb{Z}^d$  among random conductances that permit jumps of arbitrary length, where the law of the conductances is assumed to be stationary and ergodic. Under a suitable moment condition we obtain a quenched local limit theorem and Hölder regularity estimates for solutions of the heat equation for the associated non-local discrete operator. Our results apply to random walks on long-range percolation graphs with connectivity exponents larger than  $2d$  when all nearest-neighbour edges are present. This talk is based on a joint work with Martin Slowik (Mannheim).