# The Ornstein–Uhlenbeck operator on metric star graphs
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We first prove that the corresponding evolution equation is well-posed in different function spaces (especially, the classical $L^2$-space and a Lebesgue space $L^2_\mu$-with respect to an appropriate invariant measure) and provide an explicit formula for the solution.

We then turn to its spectral theory on $L^2_\mu$, proving in particular that the Ornstein–Uhlenbeck operator has trace class resolvent.

We will also provide an explicit formula for the heat kernel associated with the harmonic oscillator on metric star graphs.

This is joint work with Abdelaziz Rhandi (Salerno).

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