

# Symmetrization of exterior parabolic problems and probabilistic interpretation

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## **Abstract**

We prove a comparison theorem for the “spatial mass” of the solutions of two exterior parabolic problems, one of them having symmetrized geometry, using approximation of the Schwarz symmetrization by polarizations, as it was introduced by F. Brock and A. Solynin. This comparison provides an alternative proof, based on PDEs, of the isoperimetric inequality for the Wiener sausage, which was proved by Y. Peres and P. Sousi.