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*The B-theorem for the first Dirichlet eigenvalue*

The B-conjecture, first proved by Brascamp and Lieb, asserts the log-concavity of the Gaussian measure of a centrally-symmetric convex body under linear transformations. Using Brownian motion and the Kac formula, we deduce a corresponding log-convexity property of the first Dirichlet eigenvalue of convex domains. Notably, this log-convexity persists even without central symmetry. We then deduce the uniqueness of the Faber-Krahn position minimizing the first eigenvalue, thus answering a question of Schmuckenschlager and obtaining a spectral analogue of the John position. We also discuss some other related inequalities. Joint work with Iosif Polterovich.