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The Clamped Plate in Gauss Space

We consider the analogue in Gauss space of Lord Rayleigh's conjecture for the clamped plate, showing that the first eigenvalue of the bi-Hermite operator on certain domains is bounded below by a constant C_V times the corresponding eigenvalue of a half-space with the same Gaussian measure V . The proof uses rearrangement methods similar to Talenti, Ashbaugh, and Benguria's for the Euclidean clamped plate. We also obtain the numerical bound $C_V \geq 0.91$ by solving an associated minimization problem in terms of parabolic cylinder functions. (Joint work with J. Langford.)