# The Minimax Lower Bound of Kernel Stein Discrepancy Estimation*

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## Abstract

Kernel Stein discrepancies are among the most powerful approaches to quantify goodness-of-fit on a wide variety of domains with numerous successful applications. To our best knowledge, all available KSD estimators achieve $\sqrt{n}$-convergence. We present (using two different proof techniques) matching lower bounds both on $\mathbb{R}^d$ and on general domains, providing complementary insights.

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