Tractability results for integration on Gaussian spaces

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We study integration with respect to the d-dimensional standard normal distribution on Gaussian spaces. Here, given shape parameters $\sigma_j > 0$, a Gaussian space is a reproducing kernel Hilbert space, whose kernel is defined by $L_{\sigma}(x,y) = \prod_{j=1}^{d} \exp(-\sigma_j^2(x_j - y_j)^2)$.

We give new tractability results based on the asymptotic behavior of σ_j as j tends to infinity. Positive results are obtained both from previously established algorithms, as well as a new transference principle between Gaussian spaces and Hermite spaces.