



The ARCS Seminar

Unsettled linear algebra of Fourier transforms of complex-coefficient pseudo-Gaussians

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Abstract: For complex symmetric $n \times n$ matrices A with positive definite real part, there is a constant factor $\det(A)^{-1/2}$ in Fourier transform of $\exp(-x^T Ax/2)$. Choosing $\det(A)^{-1/2}$ to be the square root of $\det(A)^{-1}$ with positive real part is correct for $n \leq 2$, but I will give an example for $n = 3$ where $\det(A) = \det(B)$ but $\det(A)^{-1/2} = -\det(B)^{-1/2}$. Characterizing which square root of $\det(A)^{-1}$ is correct is an open problem. I will present my conjecture and my main result, an algorithm for computing the correct square root using a non-Hermitian variant of the Cholesky factorization.

Time and Place: Wednesday, March 8 from 4:30–5:30PM (Mountain Time Zone) in ENGR 187



The Rings and Wings Seminar is an activity of ARCS.
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