

Title: Cauchy's Theorem and the Gaussian Function

Speaker: Taylor Frisch

Abstract:

The Gaussian function (aka bell curve) is a well-known and important part of statistics. In this talk we will use complex analysis, particularly Cauchy's Theorem, to find the exact value of its Fourier transform. We will also show that for particular values of the mean and standard deviation, the Fourier transform sends the Gaussian function to itself.

Reference:

*A First Course in Complex Analysis*. M. Beck, G. Marchesi, G. Pixon, L. Sabalka. (2017)