

THE TRIVIAL NOTIONS SEMINAR

Dingding Dong

will speak on

**An optimal uncertainty principle
in dimension twelve**

ABSTRACT

The Heisenberg uncertainty principle states that we cannot measure both the position and speed of a particle with perfect accuracy. Mathematically, it says roughly that if a function is concentrated near 0, then its Fourier transform must be more dispersed. In this talk, we will make this notion precise and prove an optimal uncertainty principle in dimension twelve, established by Cohn and Gonçalves. In particular, to show that the optimal bound is achieved, we use a class of eigenfunctions for the Fourier transform constructed via modular forms, which was introduced in Viazovska's proof of the sphere packing bound in dimension eight.

Friday, October 28, 2022

at 11.50pm

Science Center, Room 507