

## Dr. Zhifei Zhang

Peking University

China

Zhifei Zhang is a Boya distinguished professor of School of Mathematical Sciences at Peking University. His research interest includes the qualitative theory of fluid dynamics equations, free interface problem, mathematical theory of liquid crystal, hydrodynamic stability and boundary layer theory. He is an invited speaker of ICM 2022.

Title: Blow-up for the supercritical defocusing nonlinear wave equation

Abstract:

In this talk, we introduce our recent result on the finite time blow-up for the supercritical defocusing nonlinear wave equation (NLW) in  $\mathbb{R}^{d+1}$ ,  $d \geq 4$ . The proof of this result is based on a surprising connection between complex-valued NLW and relativistic Euler equations, and the construction of self-similar imploding solutions of the relativistic Euler equations.