

Reconstruction of a Polytope from the Surface of Buoyancy

Serhii Myroshnychenko

University of the Fraser Valley

The surface of buoyancy (or surface of centers) of a convex body plays a crucial role in the study of floating bodies. Its properties and significance have been extensively explored in recent works by D. Florentin, H. Huang, D. Ryabogin, C. Schütt, B. Slomka, E. Werner, N. Zhang, and others. In this talk, we examine the unique determination of a convex polygon by its surface of buoyancy and explore analogous extensions to higher dimensions. This presentation is based on joint work with S. Dann and O. Herscovici.

In Special Session 12 on Harmonic Analysis in Geometric Tomography at the Mathematical Congress of the Americas 2025.