

## **FOURIER DIMENSION OF CONSTANT RANK HYPERSURFACES**

**Speaker: Junjie Zhu 朱俊杰**

**SCMS 上海数学中心**

**Time: Wednesday, Apr. 29th, 15:30**

**Venue: Room 102, SCMS**

### **Abstract:**

Any hypersurface in  $\mathbb{R}^{d+1}$  has a Hausdorff dimension of  $d$ . However, the Fourier dimension depends on the finer geometric properties of the hypersurface. For example, the Fourier dimension of a hyperplane is  $0$ , and the Fourier dimension of a hypersurface with non-vanishing Gaussian curvature is  $d$ . Recently, Fraser, Harris, and Kroon showed that the Euclidean light cone in  $\mathbb{R}^{d+1}$  has a Fourier dimension of  $d - 1$ , which leads one to conjecture that the Fourier dimension of a hypersurface equals the number of non-vanishing principal curvatures. We prove this conjecture for all constant rank hypersurfaces. Our method involves substantial generalizations of their strategy.