中国科学院数学与系统科学研究院应用数学所

偏微分方程及其应用中心

学术报告

报告题目： **Fractional Sobolev Isometric Immersions of Planar Domains**

报 告 人： 李思然，上海交通大学

时　　间： **2023年6月15日（周四）上午10:00-11:00**

地　　点： 数学院南楼 620

摘　　要：

We discuss C^1-regularity and developability of isometric immersions of flat domains into $\mathbb{R}^3$ enjoying a local fractional Sobolev $W^{1+s;2s}$-regularity for $2/3 \leq s < 1$, generalizing the known results on Sobolev and H\"{o}lder regimes. Ingredients of the proof include analysis of the weak Codazzi equations of the isometric immersions and study of $W^{1+s;2/s}$-gradient deformations with symmetric Jacobian derivative and vanishing distributional Jacobian determinant. On the way, we also show that the distributional Jacobian determinant, conceived as an operator defined on the Jacobian matrix, behaves like determinant of gradient matrices under products by scalar functions. Joint work with Reza Pakzad and Armin Schikorra.