SCMS Colloquium

An overview of tiling （密铺漫谈）

Speaker: Erxiao Wang

Zhejiang Normal University

Time：Fri, Mar 7, 16:00-17:00

Venue: Gu Lecture Hall, SCMS

Abstract: In recent years, the "niche" field of tiling or tessellation has witnessed frequent breakthroughs. Notable examples reported by American popular science journals include: convex pentagonal monotiles in the plane, densest sphere packings, rational tetrahedra, the periodic tiling conjecture, and the "einstein" or aperiodic monotiles. This talk will present the latest progress, discuss connections to symmetry, topology, algebraic geometry, number theory, and harmonic analysis, and highlight interdisciplinary intersections with fields such as materials science and artificial intelligence.

About the speaker: 王二小教授现为浙江师范大学双龙特聘教授，曾任职 MSRI、UT Austin、NUS 及中科院海外归国杰出青年，是 TU Munich、HKUST 访问学者。长期研究微分几何和可积系统交叉的环群方法领域，合作做出反常识的基础理论突破，证明了可积系统的解空间上的有理环群作用均由其导师 Terng 和 Uhlenbeck 推广的广义贝克隆变换生成，无需幂零元作用。又经过六年合作攻关和两年审稿，2022 年发表合约两百页的三篇长文，研究单密铺球面的五边形分类。现已彻底解决球面多边形边对边单密铺完整分类这个百年难题；正带领十余名本硕博探索着二维错棱、曲棱、双曲、多层、多原型、随机密铺，三维密铺，整数密铺等，及其与材料和人工智能等领域的交叉。