



## 复旦大学数学科学学院 数学综合报告会

报告题目: **Trajectories on the Platonic Solids**

报告人: David Aulicino

(The City University of New York)

报告时间: 2018-01-09 星期二 10:00-11:00

报告地点: 光华东主楼 1801

摘要: Given any of the 5 Platonic solids, can we find a straight-line trajectory on the surface of the solid that starts and ends at the same vertex without passing through any other vertex? It was proven for the tetrahedron, octahedron, cube, and icosahedron that there is no trajectory from a vertex to itself that does not pass through another vertex. We will give a simple proof of this for the tetrahedron and outline the proof for the other solids. Finally, we will show that there does indeed exist such a trajectory on the dodecahedron, and using translation surfaces, we give a complete classification of such trajectories. This is joint work with Jayadev Athreya.

非线性数学模型与方法教育部重点实验室  
中法应用数学国际联合实验室  
上海市现代应用数学重点实验室  
复旦大学数学研究所