

1129-53-333

**Ruobing Zhang\*** (ruobing.zhang@stonybrook.edu). *Non-local Curvature and Topology of Locally Conformally Flat Manifolds.*

In this talk, we focus on the geometry of conformally flat manifolds  $(M^n, g)$  with positive scalar curvature. Schoen-Yau proved that its universal cover is conformally embedded in  $S^n$  such that  $M^n$  is a Kleinian manifold. Moreover, the associated limit set has Hausdorff dimension  $< (n - 2)/2$ . If additionally we assume that the non-local curvature  $Q_{2\gamma} > 0$  for some  $1 < \gamma < 2$ , then the upper bound of the Hausdorff dimension is improved to  $(n - 2\gamma)/2$ . In fact, the above upper bound is sharp. As applications, we obtain some topological rigidity and classification theorems in lower dimensions. Also I will show some applications in the fractional Yamabe problem. (Received March 19, 2017)