



# 北京大学讲座网

Peking University Lecture Hall

讲座预告 > [物理学院](#)

**讲座主标题:** 非合作博弈：实证与理论

**讲座人:** 周海军 / 中科院理论所

**讲座地点:** 物理楼南408

**讲座开始时间:** 2014-05-23 10:00:00

**讲座结束时间:** 2014-05-23 01:00:00

**讲座内容介绍:**



希望录制

How humans make decisions in non-cooperative strategic interactions is a big question. For the fundamental Rock-Paper-Scissors (RPS) model game system, classic Nash equilibrium (NE) theory predicts that players randomize completely their action choices to avoid being exploited, while evolutionary game theory of bounded rationality in general predicts persistent cyclic motions, especially in finite populations. However as empirical studies have been relatively sparse, it is still a controversial issue as to which theoretical framework is more appropriate to describe decision-making of human subjects. Here we observe population-level persistent cyclic motions in a laboratory experiment of the discrete-time iterated RPS game under the traditional random pairwise-matching protocol. This collective behavior contradicts with the NE theory but is quantitatively explained, without any adjustable parameter, by a microscopic model of win-lose-tie conditional response. Compared with the NE mixed strategy, this new strategy with optimized parameters can offer higher payoffs to individual players, indicating social efficiency is possible in this competition system. Our work demonstrates the feasibility of understanding human competition behaviors from the angle of non-equilibrium statistical physics.

北京大学版权所有 [Feedback - Contact](#)