

**COLLOQUIUM****Nash Equilibrium Problems****Professor Jiawang Nie**

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**Abstract**

Nash equilibrium problems (NEPs) are games for several players. A Nash Equilibrium (NE) is a tuple of strategies such that each player's benefits cannot be improved when the other players' strategies are fixed. For NEPs given by polynomial functions, we formulate efficient polynomial optimization problems for computing NEs. The Moment-SOS relaxations are used to solve them. Under genericity assumptions, the method can find a Nash equilibrium if there is one; it can also find all NEs if there are finitely many ones. The method can also detect nonexistence if there is no NE. This is a joint work with Dr. Xindong Tang.

**Biography**

Prof. Jiawang Nie is currently a professor of Mathematics in University of California, San Diego. He works in the broad area of applied and computational mathematics. His research areas are optimization, convex algebraic geometry, tensor computation, and their applications in data sciences. He received the Tucker Prize Finalist (2009), NSF Career Award (2009), Informs Optimization Prize for Young Researchers (2014), Chang-Jiang Scholar (2017), SIAM SIAG/Linear Algebra Best Paper Prize (2018), and Feng Kang Prize 2021.

Date: February 25, 2022 (Friday)  
Time: 10:00 - 11:00am (Hong Kong Time)  
Venue: ZOOM: <https://hku.zoom.us/j/>  
Meeting ID: 940 0962 9889  
Password: 286660

*All are welcome*