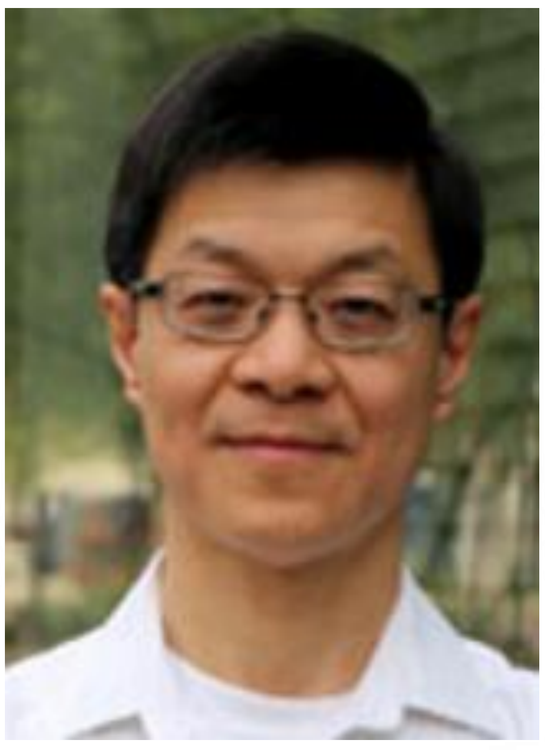
浙江大学网络传感与控制研究组

group of NEtworked Sensing and Control

研究生选修课程

Analytical Methods for Internet Congestion Control



主讲人： **Prof. Steven Low**

Department of EE & CMS
California Institute of Technology

时间: 4月18日 - 4月22日 上午 9:45-11:45

地点: 浙江大学工控新楼501会议室

***Biography*:** Prof. Low received the B.S. degree from Cornell University, Ithaca, NY, USA, and the Ph.D. degree from the University of California, Berkeley, CA, USA, both in electrical engineering. He is currently a Professor with the Department of Computing and Mathematical Sciences and the Department of Electrical Engineering at the California Institute of Technology, Pasadena, CA, USA. Before that, he was with AT&T Bell Laboratories. Prof. Low was a corecipient of IEEE best paper awards, the R&D 100 Award, and an Okawa Foundation Research Grant.

Course introduction: This short course introduces mathematical methods for designing and analyzing congestion control algorithms for the Internet. We will model Internet traffic as fluids that flow from sources to destinations and model congestion control algorithms using ordinary differential equations. We will discuss the existence and uniqueness of solutions to these equations, characterize their equilibrium points, and prove their stability properties. We will use several real protocols for illustration but the emphasis will be on various mathematical techniques for the analysis of congestion control algorithms. We will rigorously prove several main results.