Abstract:
This talk consists of two parts. In the first part, I will review some basic idea of self-normalization (SN) for inference of time series in the context of confidence interval construction and change-point testing in mean. In the second part, I will present a piecewise linear quantile trend model to model infection trajectories of COVID-19 daily new cases. To estimate the change-points in the linear trend, we develop a new segmentation algorithm based on SN test statistics and local scanning. Data analysis for COVID-19 infection trends in many countries demonstrates the usefulness of our new model and segmentation method.

Bio:
Xiaofeng Shao is currently a professor at University of Illinois at Urbana-Champaign. He is a fellow of Institute of Mathematical Statistics (IMS) and American Statistical Association (ASA). His research interests include: Time series analysis, functional data analysis, high dimensional data analysis and their applications in atmospheric science, business, economics, finance, and neuroscience.