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Scientific talk

# Security and Distributed Estimation of Cyber-physical System

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## Abstract.

The inclusion of communication and computation capabilities into physical systems has made them more efficient and reliable. These physical plants are referred to as cyber-physical systems and pose new challenges to both engineers and scientists. In this talk, I will address two important issues involved with cyber-physical systems, namely, security and distributed estimation. In the first part of the talk, the security of cyber-physical systems is studied from system theory perspective. It is shown how zeros of cyber-physical systems can be used to construct concealable attacks. Then in the second part, an optimal distributed filter for state estimation in a network environment is illustrated.



## Biographical Sketch:

Mohsen did his undergraduate studies in Electrical Engineering at the Shiraz University of Technology. He then did his master studies again in Electrical Engineering at the National University of Singapore in 2009. He did his PhD under supervision of Prof. Brian. D. O. Anderson at Research School of Engineering in the Australian National University in 2014. He is currently a post-doctoral researcher at the Newcastle University, Australia. His research interests include security, control and estimation for cyber-physical systems and econometric modeling.

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