

# Compositional Abstraction-Based Controller Synthesis for Continuous-Time Systems

- Read the given three papers.
- **Discuss the following:**
  - What are the different techniques introduced to construct abstractions of networks of systems?
  - What relations are used to reason about the closeness between concrete and abstract systems ?
  - How decentralized controllers are synthesized using the technique claimed in the first paper ?
- **Targeted papers:**
  - K. Mallik, A.-K. Schmuck, S. Soudjani, R. Majumdar. Compositional Abstraction-Based Controller Synthesis for Continuous-Time Systems. 2018.
  - M. Zamani and M. Arcak. Compositional abstraction for networks of control systems: A dissipativity approach. 2016.
  - M. Rungger and M. Zamani. Compositional construction of approximate abstractions. 2015.



## Contacts:

Mahmoud Khaled  
khaled.mahmoud@tum.de  
**Building:** 0509 - **Room:** 3963