

**Kazan National Research Technical University – KAI  
German-Russian Institute of Advanced Technologies  
Deutsche Forschungsgemeinschaft**

# **Networked Cybernetics: From the Classical Feedback Loop to the New Cybernetics of the 21st Century**

**DFG Leibniz Lecture  
by**

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German-Russian Institute of Advanced Technologies - GRIAT  
Chetaev Str. 18a, 420126 Kazan

The lecture will be followed by a reception by the DFG

**Online registration is obligatory :**  
<https://griat-kai.timepad.ru/event/653759/>

## **About the lecture**

Feedback based automatic control has been a key enabling technology for many technological advances over the past 80 years. New application domains, like autonomous cars driving on automated highways, energy distribution via smart grids, life in smart cities or the new production paradigm Industry 4.0 do, however, require a new type of cybernetic systems and control theory that goes beyond the classical ideas. Starting from the concepts of feedback and its significance in nature and technology, we will present in this talk the new developments and challenges in connection to the control of interconnected networks of complex systems.