Einladung zum öffentlichen Kolloquium

14.02.2020 – Herr Dr.-Ing. Adel Haghani

08:00 – 08:30 Uhr  Wissenschaftlicher Vortrag zum Thema:
"Soft Sensor Design: Applications in Modern Industrial System"
Hörsaal Ex 04, Albert-Einstein-Str. 2

09:00 – 09:30 Uhr  Lehrprobe:
"Fusion dynamischer Sensormodelle in der Prozessmesstechnik"
Hörsaal Ex 04, Albert-Einstein-Str. 2

Abstract:
The increasing demands for higher system performance, product quality, productivity and cost efficiency lead to a continuous growth of the complexity and automation degree of technical processes and systems. Typical instances of such kind of complex and distributed systems are sophisticated environment treatment, chemical processes and power plants with more than thousands process variables, sensors, actuators and controllers. The physical variables in the process are measured and used for condition monitoring and process control. However, it is not always practical to directly use sensors to measure the signals in complex industrial systems. This is mainly due to the cost of measurement system and high efforts regarding the placement of sensor in the processes. Therefore, it is popular to use the available measurements from system to estimate the variable under consideration. This approach to the problem is commonly known as soft sensor design. Classical design of soft sensor schemes relies on the quantitative model obtained from physics and mathematical knowledge of the process. However, it is difficult to establish such quantitative model in modern process industry. On the other hand, the huge amounts of process data are recorded in process historian databases and could be used for the design of soft sensors. In this presentation, an example of soft sensor design for an industrial process will be elaborated. A brief overview of existing methods for soft sensor design will be shown and their advantages and disadvantages will be discussed. A new method which takes the advantages of process measurement to predict a variable, which is expensive to be measured in online operation, will be introduced. Finally, the application of the method on the process will be demonstrated and the results will be discussed.