

# Selected Aspects of Railways

## Energy-Efficiency in Railway Operations

Lecturer: Dr. Pengling Wang

Global demand for transport is growing fast. Such growth is a token of social and economic progress, but it carries with it greater energy demand and increased CO2 emissions and atmospheric pollutants. A greater reliance on rail has the potential to cut that growth. In a world becoming ever more urbanised, rail travel is well-matched to urban needs. High-speed rail can serve as an alternative to short-distance air travel, and conventional and freight rail can complement other transport modes to provide efficient mobility.

This block-lecture will give some talks about the methods used in energy-efficient train driving and energy-efficient train timetabling/rescheduling. The assignments will be due on **July 7<sup>th</sup>, 2024**.

The number of participants is limited. Therefore, to **register** for this course, please write an email to [emunds@via.rwth-aachen.de](mailto:emunds@via.rwth-aachen.de) including your transcript of grades until **April 12<sup>th</sup>, 2024**.

Schedule				
time		topic	content	assignment
03.06.2024	start 12:30	energy- efficient train control	overall introduction to energy efficiency in railway operations	assignment I
	end 17:00		introduction to das system & ato system	
04.06.2024	start 12:30		energy-efficient train control theory	
	end 17:00		energy-efficient train control practice & in-course exercise	
05.06.2024	start 12:30	energy- efficient timetabling	basic models for timetabling (periodic & nonperiodic)	assignment II
	end 17:00		energy-efficient timetabling	