



Module title					Abbreviation
Radar systems and missions					10-I=RSM-182-m01
Module coordinator				Module offered by	
holder of the Chair of Computer Science VII				Institute of Computer Science	
ECTS	CTS Method of grading		Only after succ. compl. of module(s)		
5 numerical grade					
Duration		Module level	Other prerequisites		
1 semester		graduate			
Contents					
tals of coherent and incoherent radar systems. Configuration of the radar system and optimisation. Radar hard- ware incl. antennas, transmitter, receiver. Signal processing and data analysis. Radar systems applications for space research. This class introduces the student to the fundamentals of radar system engineering. The radar range equation in its many forms is developed and applied to different situations. Radar transmitters, antennas, and receivers are covered. The concepts of matched filtering, pulse compression, and the radar ambiguity func- tion are introduced, and the fundamentals of radar target detection in a noise background are discussed. Target radar cross-section models are addressed, as well as the effects of the operating environment, including propa- gation and clutter. MTI and pulsed Doppler processing and performance are addressed. Range, angle, and Dopp- ler resolution/accuracy, as well as fundamental tracking concepts, will also be discussed.					
Intended learning outcomes					
Student should have knowledge about physical principles, techniques and applications for radar systems.					
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)					
V (2) + Ü (2)					
Module taught in: English					
<b>Method of assessment</b> (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)					
written examination (approx. 90 to 120 minutes) Language of assessment: English creditable for bonus					
Allocation of places					
Additional information					
Workload					
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Satellite Technology (2018)					
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