Module description

Module title					Abbreviation
Conformal Field Theory 2					11-KFT2-161-m01
Module coordinator				Module offered by	
Managing Director of the Institute of Theoretical Physics and Astrophysics				Faculty of Physics and Astronomy	
ECTS Method of grading			Only after succ. compl. of module(s)		
6	numer	rical grade			
Duration Module level		Module level	Other prerequisites		
1 semester gr		graduate			
Contents					
 lid-on-solid models), correlation functions of the critical Ising model, fusion rules and Verlinde algebra, Land-au-Ginzburg description of minimal models, modified Coulomb gas method and its application to the Ising model, superconformal models) 6. Free bosons and fermions (mode expansions, twist fields, fermionic zero modes and fermion parity) 7. Free fermions on the torus (operator implementation of the partition function, vacuum energies, representations of Virasoro algebra, modular group and fermionic spin structures, Virasoro characters, critical Ising model on the torus, Jacobi theta function identities) 8. Free bosons on the torus (Lagrangian formulation of the partition function, fermionisation, orbifolds in general, S1/Z2 orbifold, Gaussian and Askhin-Teller models, duality between original and orbifold theories, marginal operators, the space of c=1 theories) 					
Intended learning outcomes					
Ine students acquire practical and conceptional familiarity with the methods of conformal field theory. As the completion of "Quantum Mechanics II" (11-QM2) is the only prerequisite to take part in this course, the students also acquire basic knowledge of critical phenomena, quantum field theory and functional integrals. The course is primarily addressed to students of Theoretical Physics and aims to increase their general level of knowledge by becoming acquainted with a sophisticated subdiscipline with applications in many subdisciplines of Condensed Matter Physics.					
Courses (type, number of weekly contact hours, language — if other than German)					
V (3) + R (1) Module taught in: German or English					
Method of assessment (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) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English					
Allocation of places					
Additional information					
Workload					
180 h					

SI 83

VOEL

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in Master's degree (1 major) Mathematics (2016) Master's degree (1 major) Physics (2016) Master's degree (1 major) Mathematical Physics (2016) Master's degree (1 major) Computational Mathematics (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Master's degree (1 major) Computational Mathematics (2019) Master's degree (1 major) Mathematics (2019) Master's degree (1 major) Physics (2020) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Master's degree (1 major) Mathematical Physics (2020) Master's degree (1 major) Computational Mathematics (2022) Master's degree (1 major) Mathematics (2022) Master's degree (1 major) Mathematical Physics (2022) exchange program Physics (2023) Master's degree (1 major) Computational Mathematics (2024) Master's degree (1 major) Mathematics (2024) JMU Würzburg • generated 29.03.2024 • Module data record 123910