

GR 1 Quantengravitation

Zeit: Freitag 10:15–11:00

Raum: TU BH262

Hauptvortrag

GR 1.1 Fr 10:15 TU BH262

Quantum Gravity – General Introduction and Recent Developments — •CLAUS KIEFER — Institut für Theoretische Physik, Universität zu Köln

One of the biggest open problems in physics is the consistent unification of quantum theory with general relativity, resulting in a theory of “quantum gravity”. Such a theory would have an important bearing on the physics of the early universe and the understanding of black holes. In my talk I give a general introduction to the motivations for and the problems of quantum gravity. I shall then briefly describe the main approaches – quantum general relativity and string theory – and their main applications. I shall end with an overview of recent results and current research, dealing with such issues as the microstructure of spacetime and black-hole entropy.

Ref.: C. Kiefer, Quantum Gravity (Oxford University Press 2004).