Ankündigung
Vorlesung
Sommersemester 2020

Geometry of Black Holes

Dr. Anda Degeratu

Have you ever asked yourself what a Black Hole is? or what possible Black Holes are out there in the universe? or how can one detect Black Holes?

In this course you will learn how Black Holes arise as solutions to the Einstein Equations. Examples are the Schwarzschild solution which describes a slowly rotating Black Hole and the Kerr solution which describes a rotating one. We will then study their geometry and use the tools of (semi-)Riemannian geometry to understand the movement of particles (and therefore spacecrafts) near Black Holes. We will see that there are only two parameters which describe astrophysical Black Holes: their mass and their angular momentum (or spin). We would then talk about the known Black Holes in our Universe and the methods of detecting them.

The prerequisites for this course are a course in Differential Geometry and basic notions of Riemannian Geometry. No physics background is necessary.

Vorlesung:
Mo. 14:00-15:30 Uhr,
Mi. 11:30-13:00 Uhr im Raum 7.530
(the first Vorlesung is on Wednesday, 8.April, 2020)

Übungen:
Mi. 14:00-15:30 Uhr im Raum 7.530

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70569 Stuttgart

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