



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG

CHAMPP

CENTER IN HAMBURG FOR
ASTRO-, MATHEMATICAL AND
PARTICLE PHYSICS

LECTURE COURSE IN THE QUANTUM UNIVERSE RESEARCH SCHOOL

Winter Term 2024/2025

Stellar structure and evolution

Thomas Kupfer

Course Description:

How do stars form and how do they evolve? What are the major energy sources that power stars, and what happens when the energy reservoir has finished? And how do “old” stars regulate the formation of newer generations of stars? The goal of this course will be to understand stellar structure and evolution using known laws of physics. We will build on the theory of stars and use observations to test those theories. Overall, this course will cover all the basics and a few advanced topics in stellar evolution. It will be based on the online-only textbook by Onno Pols, “Stellar Structure and Evolution” as well as “Stellar Structure and Evolution” by Kippenhahn, Weigert and Weiss.

Prerequisites:

While not strictly required, it is definitely helpful to be aware some basic concepts taught in a BSc introductory astronomy course. The course language is English.

Literature:

Main book: Stellar Structure and Evolution - Authors: Onno Pols. Available online: https://www.astro.ru.nl/~onnop/education/stev_utrecht_notes/

For more details: Stellar Structure and Evolution by Rudolf Kippenhahn, Alfred Weigert, Achim Weiss

Date and Place:

Wed, 10:00–11:30, 1076, Notkestraße 9

Thu, 10:00–10:45, 1076, Notkestraße 9

Problem Classes:

Thu, 10:45–11:30, 1076, Notkestraße 9

Starting on:

23 October 2024
