

Cosmology Block Course 2014

Generalities & Organizational matters

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Institut für Theoretische Astrophysik/Haus der Astronomie

28 July – 5 August 2014

When, Where, What, Who

- Lecturers: Simon Glover (ITA) & Markus Pössel (HdA)
- Tutor: Alberto Rorai
- Dates: July 28 – August 1 and August 4–5
- Lecture time: 9:15 am (= 9 am c.t.) – 12:30 pm, with 20 minute break around 10:45
- Exercises: 2:15 pm (= 2 pm c.t.) - 4:30 pm on lecture days (except August 5)
- Written examination: 2:15 pm - 4:30 pm August 5 (allowed to bring 1 sheet of A4 paper [double-sided] with notes!)
- Lecture notes will be available on <http://www.haus-der-astronomie.de/cosmology-block>

How to get Credit

Masters students:

- Lecture is part 1 of module MVAstro4
- To complete module: attend cosmology seminar (part 2 of MVAstro4)
- MVAstro has a total of 6 CP (4 CP for this lecture/exercises/examination, 2 CP for seminar); credit is only given if both parts are completed (lecture plus seminar)
- Exercises: Complete/discuss during exercise period
- Written examination: pass/fail grading → “pass” necessary for credit

PhD students:

- To get credit, attend the lecture
- You're welcome to attend the exercises, but that's optional

Lectures

28 Jul	Introduction, general relativity, Friedmann equations (MP)
29 Jul	Cosmological models, distance measures, age of the universe (MP)
30 Jul	Thermal history, primordial nucleosynthesis, recombination (MP)
31 Jul	Linear perturbations, power spectrum, non-linear regime, spherical collapse (SG)
1 Aug	Gravitational lensing; Cosmic microwave background part I (SG)
4 Aug	Cosmic microwave background part II (SG)
5 Aug	The very early universe, inflation, Dark Energy (MP)