Astrophysics

Module No.: MN-P-SP-Astro, MN-P-PN-Astro, MN-P-WaMa   Version: 19.04.2016 PN

Course: Optical/Infrared Interferometry

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Category	Type	Language	Teaching Hours	CP	Semester
Specialized Course	Lecture	English	2+1	4.5	SuSe
Specialized Course	Lecture	English	2	3	SuSe

Requirements for participation:

Astrophysics I

Type of module examinations:

One oral examination at the end of the module

Duration of the course:

1 semester

Aims of the course:

Acquiring the fundamental knowledge on the technique of optical/IR interferometry to study a variety of astrophysical processes in galactic (YSOs, Massive stars, circumstellar disks) and extragalactic objects (AGNs) at very high angular resolution.

Contents of the course:

Part I: Key science cases for OIR interferometry: YSOs, massive stars, evolved stars, pre-main and main-sequence stars, multiplicity, Active Galactic Nuclei. Part II: principles of OIR interferometry, temporal and spatial coherence, fringe tracking and sensitivity, image reconstruction, 1st and 2nd generation VLTI instruments. Part III: Astrophysical results of OIR interferometry and future prospects.

Recommended literature:

A. Labeyrie, S.G. Lipson, P. Nisenson: An introduction to optical stellar interferometry (Cambridge University Press, 325p.)
B. A. Glindemann: Principles of Stellar Interferometry (Springer)
C. J.-P. Berger: Imaging the heart of astrophysical objects with optical long-baseline interferometry (Astron Astrophys Rev (2012))