



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Accretion Discs Astrophysics

2223-113R-11

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#### Title

Accretion Discs Astrophysics

#### Teacher(s)

Dott.ssa Alessia Franchini

#### Language

English

#### Short description

Fluid dynamics theory (2 hrs)

- fluid equations: conservation of mass, angular momentum and energy
- shocks and fluid instabilities (thermal, Rayleigh-Taylor and Kelvin-Helmholtz)
- viscosity: Navier-Stokes equation

Accretion discs dynamics (3 hrs)

- fundamental equations, steady-state solutions
- viscosity in accretion discs

- gravitational instabilities
- warped discs

AGN discs phenomenology (1 hr)

- scaling relations
- disc related features in AGN spectra (big blue bump and corona)

Protostellar and protoplanetary discs (2 hrs)

- discs around young stars
- planet formation theory
- planet migration theory

## **CFU / Hours**

1 CFU / 8 hours

## **Teaching period**

Tuesday, 9th May  
Tuesday, 16th May  
Tuesday, 23rd May  
Tuesday, 30th May

## **Sustainable Development Goals**

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