SCHEDULE

WEDNESDAY, NOV 8TH

8:00 am	Registration
8:30am - 9:00 am	Opening
9:00 am - 11:00 am	Lecture 2
11:00 am -11:30 am	Coffee & mingling break
11:30am -12:30 pm	Plenary 1
12:30 pm- 1:30 pm	Seminar 1
1:30 pm - 3:45 pm	Break for lunch
4:00 pm - 5:00 pm	Seminar 2
5:00 pm - 5:30 pm	Coffee & mingling break
5:30 pm - 6:30 pm	Seminar 3
6:30 pm - 7:30 pm	Seminar 4

THURSDAY, NOV 9TH

8:45 am - 9:00 am	Welcome back!
9:00 am - 11:00 am	Lecture 1
11:00 am -11:30 am	Coffee & mingling break
11:30 am - 12:30 pm	Seminar 5
12:30 pm - 1:30 pm	Seminar 6
1:30 pm - 2:00 pm	MCTP talk
2:00 pm - 3:45 pm	Break for lunch
4:00 pm - 5:00 pm	Seminar 7
5:00 pm - 5:30 pm	Coffee & mingling break
5:30 pm - 6:30 pm	Seminar 8
6:30 pm - 7:45 pm	Short talks Students

FRIDAY, NOV 10TH

8:45 am - 9:00 am	Welcome back!
9:00 am - 11:00 am	Lecture 1
11:00 am -11:30 am	Coffee & mingling break
11:30 am - 1:30 pm	Mini lecture
1:30 pm - 3:45 pm	Break for lunch
4:00 pm - 5:00 pm	Plenary 2
5:00 pm - 5:30 pm	Coffee & mingling break
5:30 pm - 6:00 pm	Seminar 9
6:00 pm - 6:30 pm	Seminar 10
6:45 pm	Closure
7:00 pm	Goodbye hangout

Lecture 1. Júlio Fabris:

The Physics of Black Holes

In this lecture, we will revise the main aspects of the structure and formation process of black holes, their thermodynamics properties and stability. We discuss their quasi-normal modes excitations and the possible observational signatures.

Lecture 2. Renée Hložek:

Cosmological constraints with the microwave sky

In this lecture I will review the physics of the Cosmic Microwave Background (CMB) and how we use observations of the CMB to constrain cosmological parameters like the dark matter, dark energy and baryon densities. I'll describe the data analysis techniques we use to make these measurements from the ground, and how we can use microwave observations to also learn new things about important epochs in the universe, like that of cosmic reionisation.

Mini Lecture. Luciano Casarini:

Non linear matter power spectrum with Dark Energy

In this lecture we revise several methods based on numerical simulations in order to predict non-

linear matter power spectra of dark energy (DE) models. We discuss the limit of their accuracy and how improve it for likelihood analyses.

Seminars:

Wednesday

Plenary 1: Luis Ureña. About a scalar field model for dark matter: boson mass and self-interaction.

Seminar 1: Miguel Aspeitia. Cosmology of branes. From a constant brane tension to a variable.

Seminar 2: Francisco Siddhartha. Characterizing the parameters of a black hole and the properties of the surrounding medium for the future black hole astronomy.

Seminar 3: Jorge Cervantes. Testing modified gravity with galaxy surveys.

Seminar 4: Luisa Jaime. f(R) for surveys.

Thrusday

Seminar 5: Tonatiuh Matos. Energy Balance of a Bose Gas in a general curved space-time.

Seminar 6: Mario Rodríguez. Galactic dynamic: the role of dark matter.

Seminar 7: Peter Sloane. Supersymmetric higher derivative gravities and their solutions.

Seminar 8: Alberto Vazquez. Dynamical dark energy from observations.

Friday

Plenary 2: Miguel Alcubierre. Gravitational waves.

Seminar 9: Guillermo Chacón: General overview of thermal properties of polymer quantum systems

Seminar 10: Juan Carlos Degollado: Bosonic quasi-bound states around black holes.

More information about lectures and seminars here

Student Talks (here)

Participants List (here)