

A Transverse Task Force in Analogue Gravitation and Analogue Cosmology

The GDR COPHY on **Physical Cosmology** created “Transverse Task forces” at the kick-off General meeting in January 2023. These TTF aim at focusing on more narrow, dedicated topics, and may have a limited duration. They will be set up dynamically on the basis of the interests of those who will join the GDR meetings, to address a particular topic (and may concern a limited number of people). The GDR will organize dedicated meetings (this workshop is the first meeting of the **Analogue Gravitation and Analogue Cosmology Task Force**), either in association with the annual General Meeting, or **independently** for those Transverse Task forces.



GDR COPHY's website for the Transverse Task Forces:

<https://gdrcophy.in2p3.fr/transverse-task-force/>

Possible subjects of discussion:

- effective spacetime for field excitations in material system ("cosmological" and "black hole" scenarios)
- (quantum) field effects: Hawking, superradiance, QNMs, light rings, quasi bound states, particle pair-creation, Sakharov peaks, (p)reheating, dynamical instabilities, backreaction
- experiments, analytical theory and numerical simulations

Suggestions by the GDR COPHY:

Table-top experiments as a way to explore **alternative scenarios**, test the **quantum nature of gravity** and **search for hints of physics beyond Λ CDM**.

Possible Goals of the Meeting:

- state-of-the-art in France
- discussion forum with GDR
- future consortium₂ for grant applications?

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