

# SEMPARIS – Séminaires en région parisienne

<http://string.lpthe.jussieu.fr/semparis/>

## Cours

**Vendredi 3 Juin 2022, 10 :00**

IPHT, Salle Claude Itzykson, Bât. 774

Domaines : physics

Titre : *Gravitational waves in a nutshell*

Orateur : **Michele Vallisneri** ( <https://www.ipht.fr/> )

Résumé : *The detection of gravitational waves (GWs) with ground-based interferometers opened a revolutionary vista on the Universe, upending our notions about the origin of stellar-mass black holes, and offering a spectacular multimessenger view of a binary neutron-star merger and of the ensuing radiation across the electromagnetic band.*

*From a fundamental-physics standpoint, GWs provide experimental access to the strong-field regime of general relativity and to precision tests of modified gravity. This whirlwind tour of GW science is meant to give theoretical physicists and non-GW astrophysicists an appreciation of current topics of GW research, as well as an entry point to connect their work with GW applications or observations.*

*The five lectures will cover :*

*GW propagation and detection*

*GW generation and waveform models*

*Astrophysical GW sources, with focus on the LIGO-Virgo catalog*

*GW data analysis, with focus on tests of GR*

*Cosmology and cosmography with GWs*

*Livestream on [youtube.com/IPhT-TV](https://www.youtube.com/IPhT-TV) : no subscription required*

*Videoconference : subscribe to the course newsletter on the website to receive links*

*courses page :*

*<https://courses.ipht.fr/?q=en/node/249>*

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