

An Overview of Gravitation in Técnico

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Who are we?

- ▶ GRIT, COSTAR and SIM are research groups of CENTRA.
- ▶ GRIT: presently around 30 members from all over.
- ▶ Strong links to groups in:



What do we do?

We work on a wide range of topics in strong-field gravity, including:

- ▶ Critical collapse.

[PhysRevLett.123.171103](#).

- ▶ GW Phenomenology.

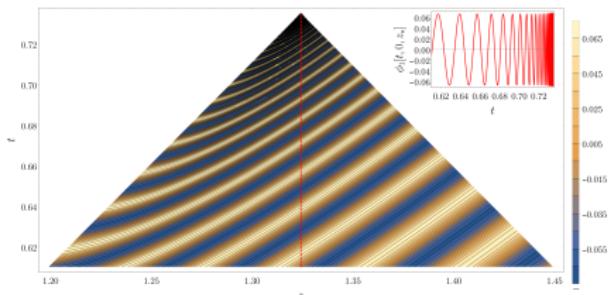
[PhysRevLett.122.081101](#).

- ▶ Semi-global NR.

[Class.Quan.Grav.Vol 37.No 3](#)

- ▶ Tests of GR.

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Blow-up threshold. Suárez Fernández, Vicente, DH.

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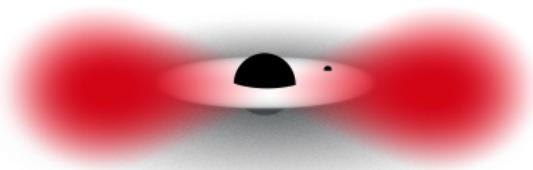
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Bosonic accretion cloud. Brito, Cardoso, Pani.

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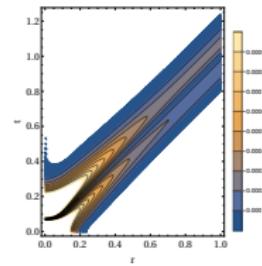
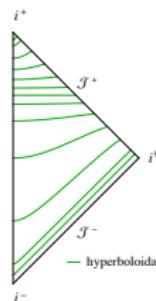
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Duarte, Feng, Gasperin, Gautam, DH, Vañó-Viñuales,

Bose.

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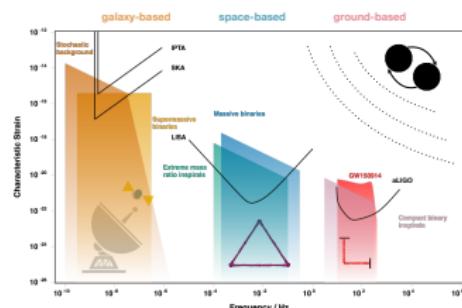
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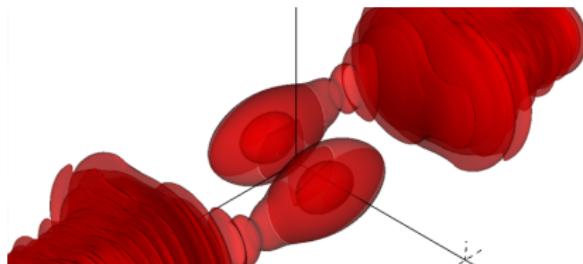


Detection strategies. (Lifted from GWverse Whitepaper).

How do we do it?

Disparate topics require various lines of attack:

- ▶ Math; PDE, geometry, numerical analysis.
- ▶ Physics; astrophysics, perturbation, modeling.
- ▶ Computation; numerical relativity, coding, HPC.

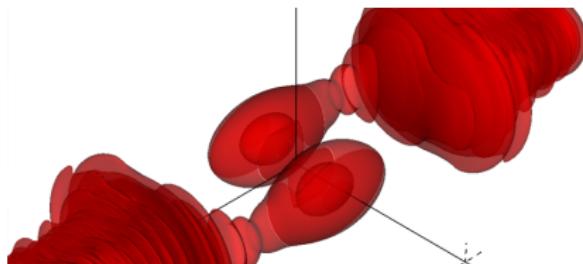


Cardoso, Duque, Ikeda. PhysRevD.101.064054.

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We have multiple funding sources so, *whoever you may be*, do get in touch if you're interested either in visiting or working with us!