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How does a dark compact object ringdown?

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Gravitational waves from the coalescence of compact binaries provide a unique opportunity to test gravity in strong field regime. In particular, the postmerger phase of the gravitational signal is a proxy for the nature of the remnant.
This is of particular interest in view of some quantum-gravity models which predict the existence of horizonless compact objects that overcome the paradoxes associated to black holes. Such dark compact objects can emit a modified ringdown with respect to the black hole case and late-time gravitational wave echoes as characteristic fingerprints.
In this talk, I develop a generic framework to the study of the ringdown of dark compact objects and provide a gravitational-wave template for the echo signal. Finally, I assess the detectability of dark compact objects with current and future gravitational-wave detectors.

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