# Gravitational waves from black hole mimickers

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  - $\Rightarrow$  Classical objects that exihibt light rings

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My motivation:

 $\Rightarrow$  Science & (classical) General Relativity

## GW echoes: perturbative treatment



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 $\Rightarrow$  Inspiral, merger and prompt ringdown are like black holes... but there are echoes

#### Echoes: Non-perturbative treatment



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