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## Gravitational waves and de Sitter spacetime

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### Abstract:

Understanding and detecting gravitational waves is key to testing new theories.

Gravitational wave calculations from black holes all assume the background spacetime is flat.

Understanding these in a de Sitter background is imperative, and has a two-fold effect:

- It expands the reach of future gravity waves observations to the earliest universe (inflation) and also the largest distances (where our universe's expansion becomes relevant).
- Develops our understanding of the asymptotic behaviour of gravitational waves in a de Sitter spacetime.

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