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From first order phase transitions to gravitational waves

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Gravitational waves have now emerged as an important experimental test of first-order phase transitions in the early Universe and we have entered an era in which predictions from particle physics models can be compared to existing gravitational wave data. In this two-part talk, we review the path from a particle physics model that can admit first-order cosmological phase transitions to predictions of the gravitational wave spectra. We discuss in particular the subtleties and challenges that can affect the robustness of the predictions and emphasise effects that lead to significant uncertainties in the predictions.

Primary authors: Prof. FOWLIE, Andrew (XJTLU, Suzhou); ATHRON, Peter (Nanjing Normal University)

Presenters: Prof. FOWLIE, Andrew (XJTLU, Suzhou); ATHRON, Peter (Nanjing Normal University)

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