

# School of Physics and Astronomy

## COLLOQUIUM

### Gravitational Waves: a new window into the Universe and its laws



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The direct detections of Gravitational Waves (GWs) by the Advanced LIGO and Advanced Virgo interferometers have opened a new era of astronomy. Aside from the current detections associated with individual loud events, one expects a superposition of coincident unresolved events leading to a stochastic GW background (SGWB).

After a short introduction to GWs, I will briefly review the SGWB and discuss how the anisotropic distribution of sources and the inhomogeneous geometry of the intervening spacetime can induce anisotropies. I will discuss in particular whether GWs can reveal the large-scale structure of the Universe.

Finally, I will highlight how GW data can shed light into the laws that govern the Universe, providing a test for modified gravity models and also for some quantum gravity proposals.

Date:	Wednesday 14 <sup>th</sup> August
Time:	2pm
Venue:	L1, Large Seminar Room 107, 10 College Walk, Clayton

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