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## **MIGA and ELGAR : towards the observation of low frequency gravitational waves using atom interferometry**

*Friday, 2 March 2018 14:00 (30 minutes)*

I will review the progress towards large-scale differential gravitational measurement using an array of Atom Interferometers (AIs) configured to differentiate Newtonian Noise, geodetic signal and GW detection. In this gravitation antenna, each of the AIs measures the local gradient of gravitational acceleration and the correlation between distant sensors enables to cancel out fluctuations of the terrestrial gravitational forces. With the foreseen cold atom technology developments in the next decade, strain sensitivities down to  $10^{-19}$  in the 0.1-10 Hz band are within reach, offering interesting complementary observations to optical GW detectors operating at other frequencies

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