



# Gravitational Waves and Black Holes: Searching for the Biggest Bangs since the Big Bang with Atom Interferometers.

**Tuesday, 25 March, 2025**  
**Auditorium & Webcast 16:00 h**

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The discovery of gravitational waves (GWs) by the LIGO and Virgo laser interferometers has opened a new window on stellar-mass black holes, and the LISA space-borne laser interferometer is designed to observe mergers involving the supermassive black holes (SMBHs) known to populate the cores of galaxies. Atom interferometers could detect GWs in a frequency band between LIGO/Virgo and LISA, and might observe mergers of intermediate-mass black holes involved in the assembly of SMBHs. We discuss this possibility in light of GW observations by pulsar timing arrays, which may be due to SMBH binaries, cosmic strings or cosmological phase transitions.

