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Recent progress on ZAIGA

Wednesday, 7 July 2021 08:30 (20 minutes)

The Zhaoshan long-baseline Atom Interferometer Gravitation Antenna (ZAIGA) is a proposed underground long-baseline atom interferometer facility, aiming for experimental research on gravitation and related problems. It will be equipped with long-baseline atom interferometers, high-precision atom clocks, and large-scale gyros. ZAIGA facility will take an equilateral triangle configuration with two 1-km-apart atom interferometers in each arm, a 300-m vertical tunnel with atom interferometers and atom clocks mounted, and a tracking-and-ranging 1-km-arm-length prototype with lattice optical clocks linked by locked lasers. The ZAIGA facility will be used for gravitational-wave detection, ultralight dark matter detection, high-precision test of the equivalence principle, clock-based gravitational red-shift measurement, rotation measurement and gravitomagnetic effect. In this talk, we will give a progress report on ZAIGA.

References:
Ming-Sheng Zhan, et. al, ZAIGA: Zhaoshan long-baseline atom interferometer gravitation antenna, Int. J. Mod. Phys. D 29, 1940005 (2020).

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Session Classification: Mid-Frequency Gravitational Waves (0.1-10 Hz): Sources and Detection Methods

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