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Current progress in developing key technologies for TianQin project

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The TianQin project was initiated in 2014. The goal is to launch the space-based gravitational-wave observatory around 2035 and to detect GWs in the frequency range 10-4~1 Hz. TianQin consists of three satellites on nearly identical geocentric orbits with radii of the order 105 km, forming a normal triangle constellation. In order to achieve the scientific goals, the nongravitational disturbance on the test masses must be reduced to the order of 10-15 m/s2/Hz1/2, and the noise of the displacement measurement with laser interferometry must be reduced to the order of 1 pm/Hz1/2. In this talk, we present the current progress of the TianQin project, including updated results of the laser ranging experiment in Zhuhai and the experimental results of TianQin-1 technology demonstration satellite.

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