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Space gravitational wave antenna DECIGO and B-DECIGO

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DECI-hertz Interferometer Gravitational-wave Observatory (DECIGO) is a future Japanese space gravitational-wave antenna. There are many science targets that DECIGO aims at, including the detection of primordial gravitational waves, direct measurement of the acceleration of the Universe, the revelation of the formation of massive black holes, and many others. DECIGO consists of four clusters of spacecraft, and each cluster consists of three spacecraft with three Fabry-Perot Michelson interferometers. As a pathfinder/science mission of DECIGO, we plan to launch B-DECIGO to demonstrate technologies necessary for DECIGO and lead to fruitful multimessenger astronomy. B-DECIGO is a small-scale version of DECIGO with a sensitivity good enough to provide frequent detection of gravitational waves. In this talk, I will explain the aimed sciences, the mechanical and optical design, and the current status of DECIGO and B-DECIGO.

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