

Control of Dual-Pass Fabry-Perot Cavity for space gravitational wave antennas : DECIGO and B-DECIGO

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A dual-pass Fabry-Perot cavity will be used for DECIGO (DECi-hertz Interferometer Gravitational-wave observatory) and B-DECIGO. To detect gravitational waves, it is necessary to establish the method to control the dual-pass Fabry-Perot cavity. We can divide this issue in two parts, "Length control" and "Alignment control". For Length control, it is demonstrated that we can control the length of dual-pass Fabry Perot cavity with Pound-Drever-Hall technique. On the other hand, for Alignment control, though the method was already proposed (WaveFront Sensor and Beam Pointing Control), it is not demonstrated yet. Therefore, an experiment is needed for the demonstration. In this poster, we show the principle to control the dual-pass Fabry-Perot cavity in the direction of the angle and explain the experiment to demonstrate it.

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