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Part 2: A presentation of the LIGO vibration isolation systems

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In order to detect the gravitational waves emitted by astrophysical events, the test masses of the LIGO observatories must be isolated from ground motion by more than 10 orders of magnitude at certain frequencies. This talk will present the vibration isolation system used to achieve this level of isolation [1]. It combines active platforms providing the low frequency isolation necessary to lock the interferometers (below 10 Hz), and passive layers providing the isolation in the detection bandwidth. The presentation will summarize the overall strategy, and will present the mechanical systems, control approach, and isolation results.

[1] Matichard, F., et al. "Seismic isolation of Advanced LIGO: Review of strategy, instrumentation and performance." *Classical and Quantum Gravity* 32.18 (2015): 185003.