

From installation to integration: phase transitions in Advanced LIGO

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Since October 2010, the LIGO observatory sites in Livingston LA and Richland WA have been thoroughly occupied with the installation of second-generation interferometric gravitational wave detectors, or Advanced LIGO. Increasingly however, those sites are undergoing a phase transition. As more detector payloads are installed and tested in-vacuum, we are entering new and more complex integration phases, in which interferometric configurations resonating infrared laser light over tens of meters or kilometers, are commissioned. In this Advanced LIGO status talk, we will sketch installation progress and in particular, note the commissioned configurations to date (lasers, suspended mode cleaners, dual-recycled Michelson and 4km half-interferometer configurations). We close with some prospects for science-mode running and potential gravitational wave detections.

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