

Abstract Submitted
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Working Towards the LISA Optical Benches at UF ANDREW CHILTON, DANIEL HILLSBERRY, GIACOMO CIANI, JOHN CONKLIN, GUIDO MUELLER, University of Florida — The first space-based gravitational wave observatory will likely be a six-link LISA-like observatory with three million km scale arms. LISA aims at detecting gravitational waves from super-massive black hole mergers, compact galactic binaries, and many other exciting sources which emit gravitational waves in the 10Hz to 1Hz frequency band. LISA will use laser interferometry to measure changes in the distance between free floating test masses at the pm/Hz level. At the core of the interferometry are the optical benches (two on each spacecraft) which receive, manipulate and redirect the different laser beams. The optical bench has been identified as a critical item in the design, manufacturing, and testing phases of this mission. Our group studies different components of the optical bench with the goal to simplify the design and manufacturing process of the optical bench.

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