New Concepts for Space-Based Gravitational Wave Missions

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The most astrophysically interesting sources in the gravitational wave spectrum lie in the low-frequency band (0.0001 - 1 Hz), which is only accessible from space. For two decades, the LISA concept has been the leading contender for a detector in this band. Despite a strong recommendation from Astro2010, there is strong motivation to find a less expensive concept, even at the loss of some science. We are searching for a lower cost mission concept by examining alternate orbits, less-capable measurement concepts, radically different implementations of the measurement concept and other cost-saving ideas. We report the results of our searches to date, and summarize the analyses behind them.