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LISA: the space-based gravitational wave observatory JOSEP SANJUAN, University of Florida — The Laser Interferometer Space Antenna (LISA) is a space-based gravitational wave (GW) observatory with the primary scientific goal of detecting and observing GW from astronomical sources in the milli-Hertz range. Such observations will provide a new way to explore the Universe and they will bring new rich information about its structure and evolution. However, GWs signals are very weak and thus very precise and low-noise measurements are required. GWs are detected by measuring the relative change in distance between free falling proof masses inside widely separated spacecraft. These changes are measured with pico-meter sensitivity by means of laser interferometry. I will give an overview of the LISA mission and a summary of the research done at the University of Florida.

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