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The LISA Pathfinder Mission

PAUL MCNAMARA, European Space Agency

LISA Pathfinder, the second of the European Space Agency's Small Missions for Advanced Research in Technology (SMART), is a dedicated technology validation mission for future interferometric spaceborne gravitational wave observatories, for example the proposed eLISA mission. The technologies required for eLISA are many and extremely challenging. This coupled with the fact that some flight hardware cannot be fully tested on ground due to Earth-induced noise, led to the implementation of the LISA Pathfinder mission to test the critical eLISA technologies in a flight environment. LISA Pathfinder essentially mimics one arm of the eLISA constellation by shrinking the 1 million kilometre armlength down to a few tens of centimetres, giving up the sensitivity to gravitational waves, but keeping the measurement technology: the distance between the two test masses is measured using a laser interferometric technique similar to one aspect of the eLISA interferometry system. *The scientific objective of the LISA Pathfinder mission consists then of the first in-flight test of low frequency gravitational wave detection metrology.* Here I will present an overview of the mission, focusing on scientific and technical goals, followed by the current status of the project.