

FemtoNewton forces and their origin: understanding the LISA Pathfinder performance

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One of the key elements for LISA to achieve the required sensitivity for gravitational wave detection is the nearly geodesic free-fall of the test masses, down to a sub-femto-g performance at milliHertz frequencies. LISA Pathfinder, which surpassed its requirements and achieved the LISA ones, represents an important benchmark in this context.

We will review the latest advances in the understanding of the physics behind the LISA Pathfinder acceleration performance: its stability during the mission, the impact of the identified noise sources, and their evolution in time.

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