
Constraining screening mechanisms with MICROSCOPE

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Abstract

Screening mechanisms allow modified gravity models with a mass-dependent extra scalar field to behave like General Relativity in dense environment, thereby efficiently hiding the scalar field in all current experiments, while the scalar field, being light in low-density regions, can affect the Universe's dynamics. Such mechanisms as the chameleon and the symmetron are expected to violate the Equivalence Principle. MICROSCOPE is therefore an ideal experiment to constrain their characteristics, even more since the experiment will be performed in space, where the effect of the scalar fields may be biggest. We will discuss how MICROSCOPE can constrain those mechanisms, as well as a route we envision to do so.

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