

## Formation and implications of ultra-light dark matter solar halos

An ultra-light particle, with mass smaller than about 1 eV, is an excellent dark matter candidate. Along the lines of <https://arxiv.org/abs/2306.12477> and <https://arxiv.org/abs/2207.04057>, the project will study the formation, via gravitational interactions, of halos of ultra-light dark matter around compact objects (for instance the Sun or a supermassive black hole). The work will be mostly analytical and will require the knowledge of mathematica. It will be based on standard perturbative calculations in classical field theory and quantum mechanics.

### Group

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### Project Category

B4. Theory of Elementary Particles

### Special Qualifications

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