

GNOME (Global Network of Optical Magnetometers for Exotic physics searches)

Poster:

Intensity Interferometry Search for Ultralight Bosonic Dark Matter in GNOME Data

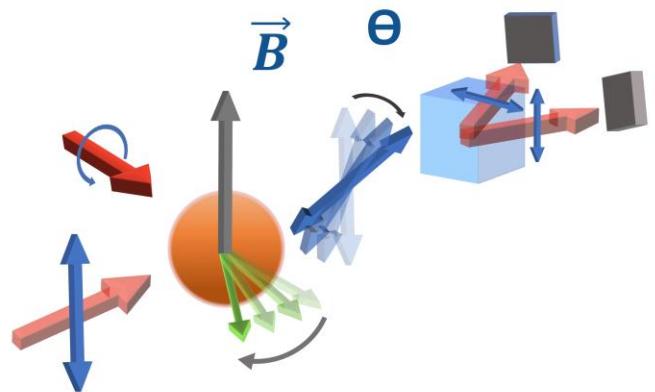
Grzegorz Łukasiewicz,
Nathaniel Figueroa-Leigh,
Daniel Gavilán-Martín,
Hector Masia-Roig
Szymon Pustelny
on behalf of the GNOME Collaboration

Patras Workshop on Axions, WIMPs and WISPs
03.07.2023 Rijeka, Croatia



Optical magnetometry

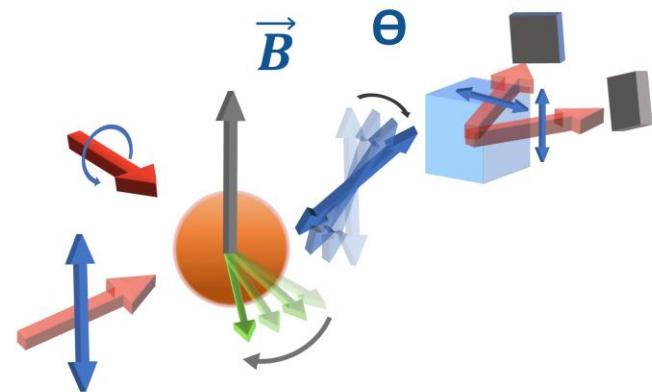
$$\mathcal{H}_z = -\gamma \vec{S} \cdot \vec{B}$$



$$\mathcal{H}_Y \sim \vec{S} \cdot \vec{\Upsilon}$$

Optical magnetometry

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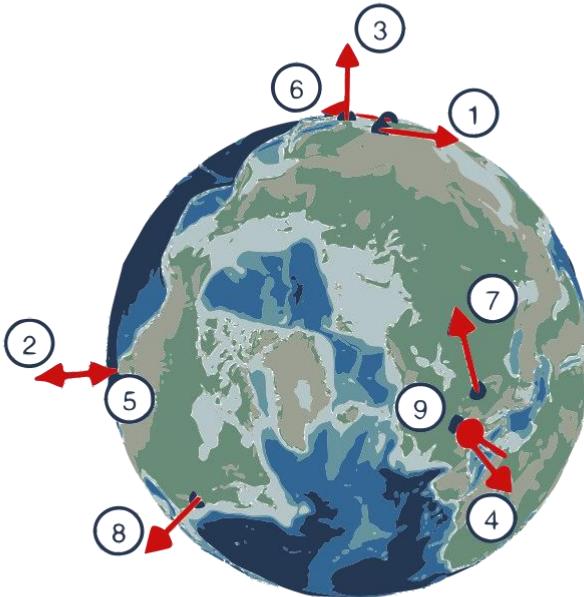


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GNOME

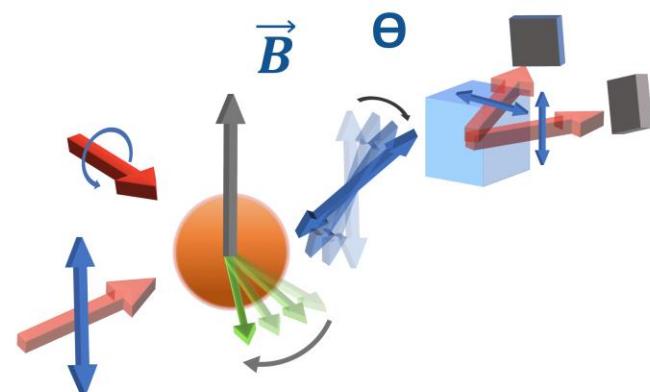
(Global Network of Optical Magnetometers
for Exotic physics searches)

- Correlation analysis
- Transient signals



Optical magnetometry

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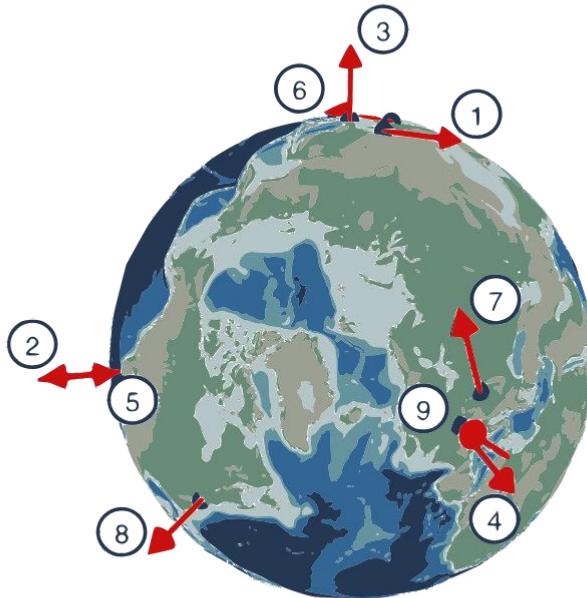


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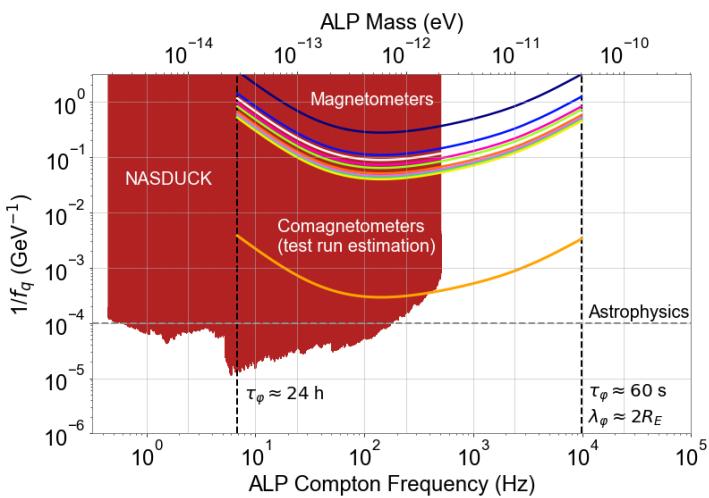
What can a GNOME do?

- Domain walls
- Axion stars
- Q-balls
- Solar axion halo
- Stochastic fluctuations
- Exotic low-mass fields bursts



Quadratic ALP-fermion Coupling

Intensity Interferometry Analysis Update
(poster)



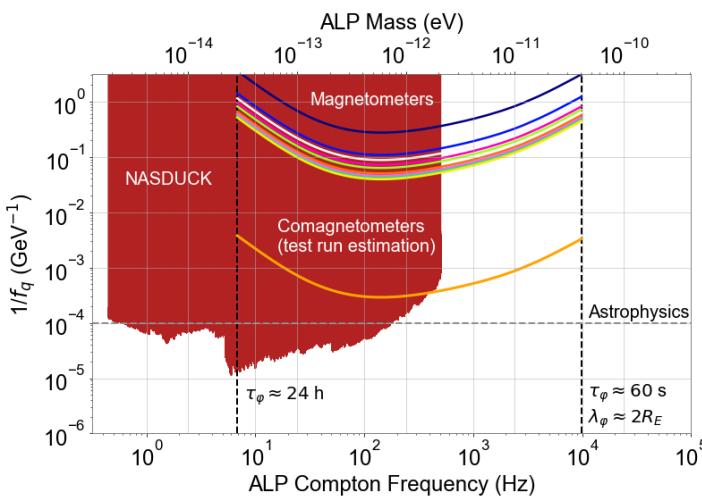
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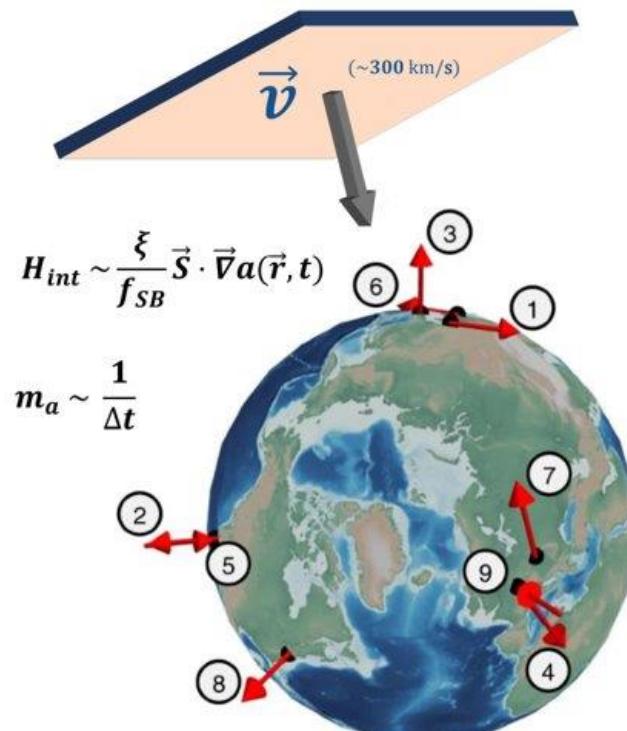
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Domain Walls Search

(Daniel Gavilán-Martín presentation on
Wednesday at 14:00)



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