

ASTROPHYSICAL AND COSMOLOGICAL CONCEPTS

Jamie McDonald

jamie.mcdonald@manchester.ac.uk



The University of Manchester

Objectives and Outlook

- Encourage symbiosis with astro community found in axion/DM physics
- Some interesting existing efforts >
- Better modelling needed machinery very well-developed from axions! e.g. stellar signals, McDonald, Witte Phys. Rev. D 108 (2023) 10, 103021

- Should be upfront about uncertainties whilst continuing to encourage astro searches!
- New ideas for generation of UHFGWs in astro environments ?
- Sensitivity with future facilities (e.g. SKA) and use of archival telescope data + new observations
- Want to encourage generation of new ideas for indirect/astro-detection of UHF GWs?

Immediate Next Steps for Review

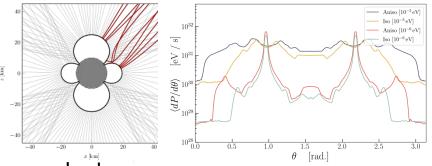
Begin gathering recent literature on cosmo/astro searches for UHFGWs – please contact me if you have suggestions/input

Detecting High-Frequency Gravitational Waves in Planetary Magnetosphere

 $\label{eq:tau} \begin{array}{c} {\rm Tao \ Liu,^{1,[\bullet]} Jing \ Ren,^{2,[\dagger]} \ and \ Chen \ Zhang^{1,[t]} \end{array} \\ {\rm Potential \ of \ radio \ telescopes \ as \ high-frequency \ gravitational \ wave \ detectors \end{array}$

 $\label{eq:Valerie Domcke} \begin{array}{l} {\rm Valerie \ Domcke}^{1,\,2,\,3} \ \mbox{and \ Camilo \ Garcia-Cely}^1 \\ {\rm Probing \ high \ frequency \ gravitational \ waves \ with \ pulsars} \end{array}$

Asuka Ito,^{1, 2, *} Kazunori Kohri,^{2, 3, 1, 4} and Kazunori Nakayama^{5, 1, 4, †}





SKA