

Multi-wavelength probes of the Fermi GeV excess

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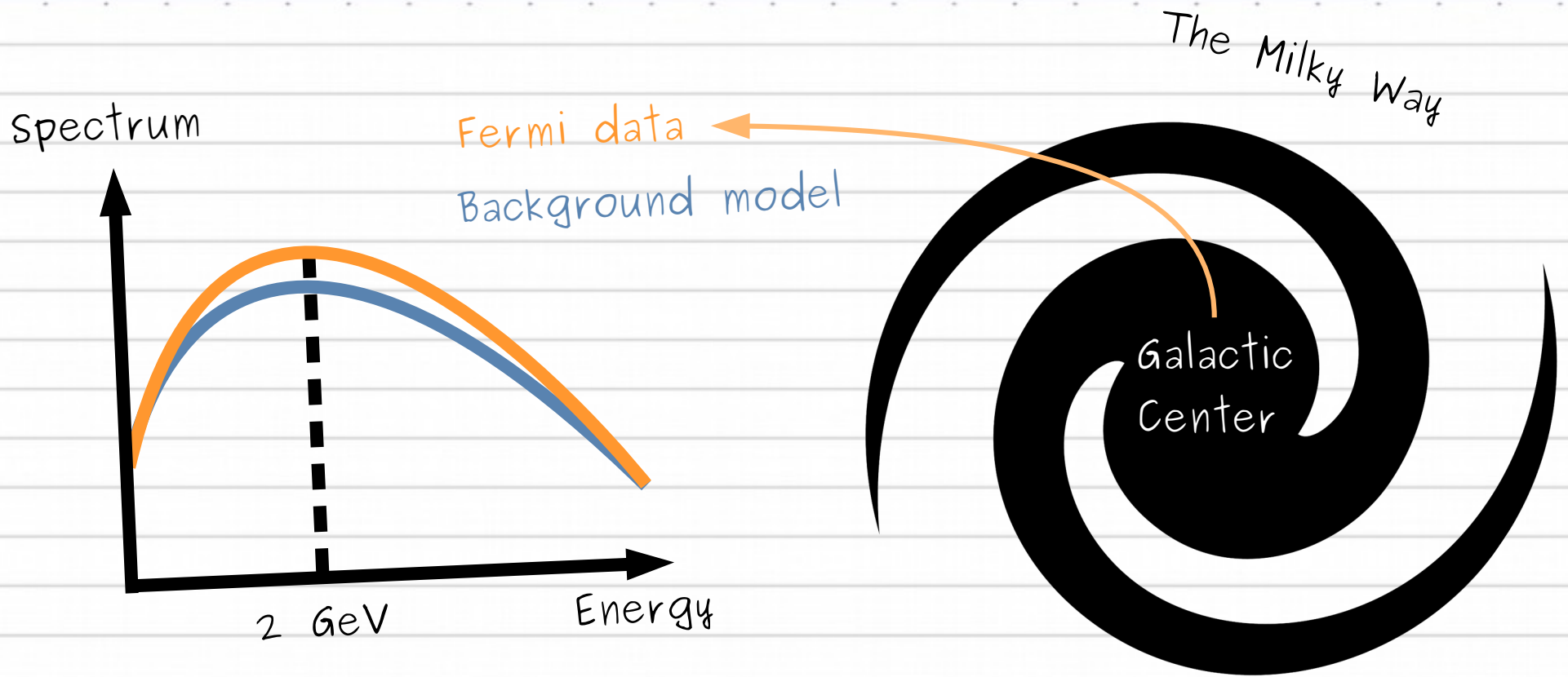
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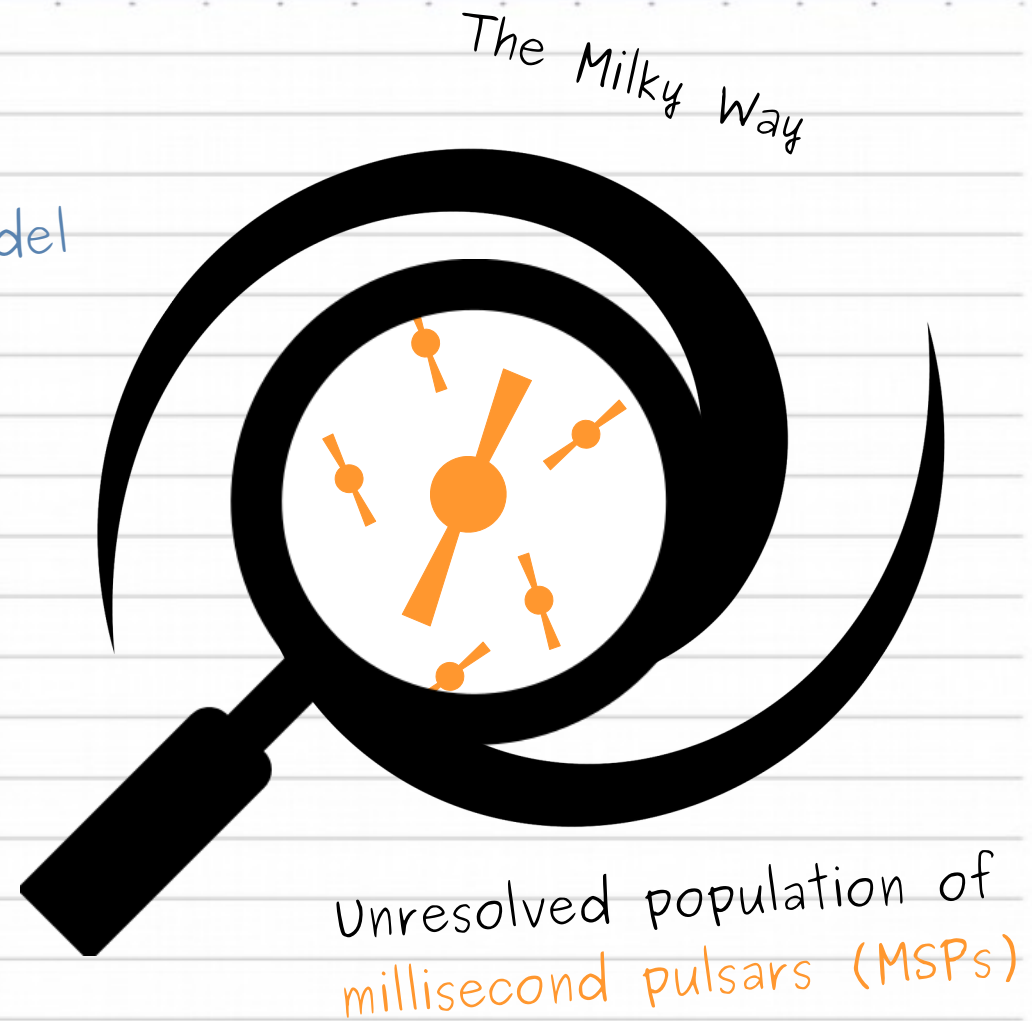
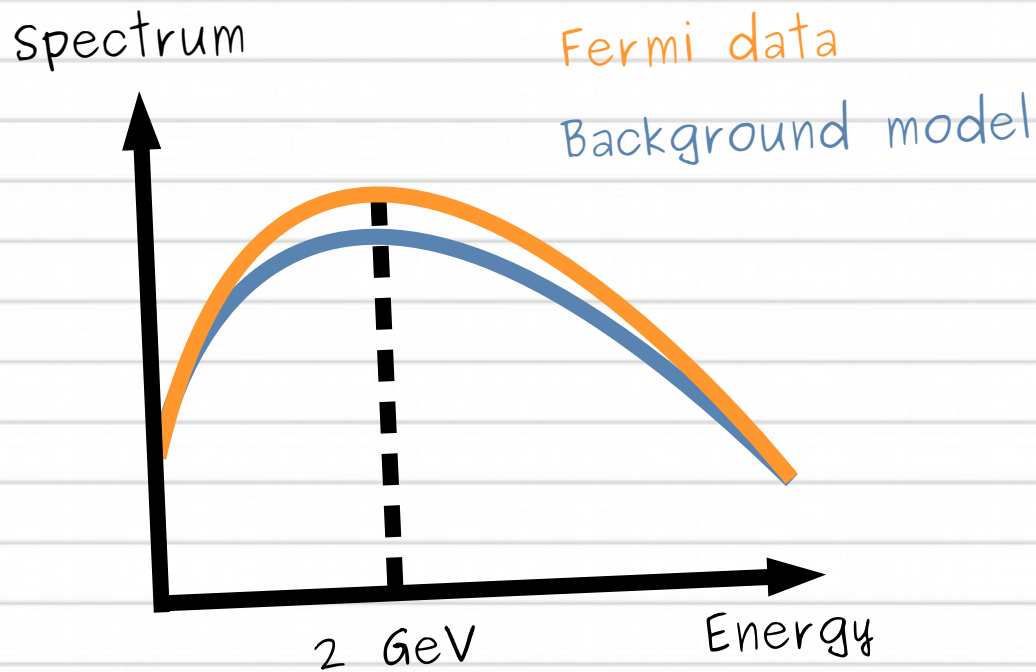


The GeV excess and the MSP hypothesis



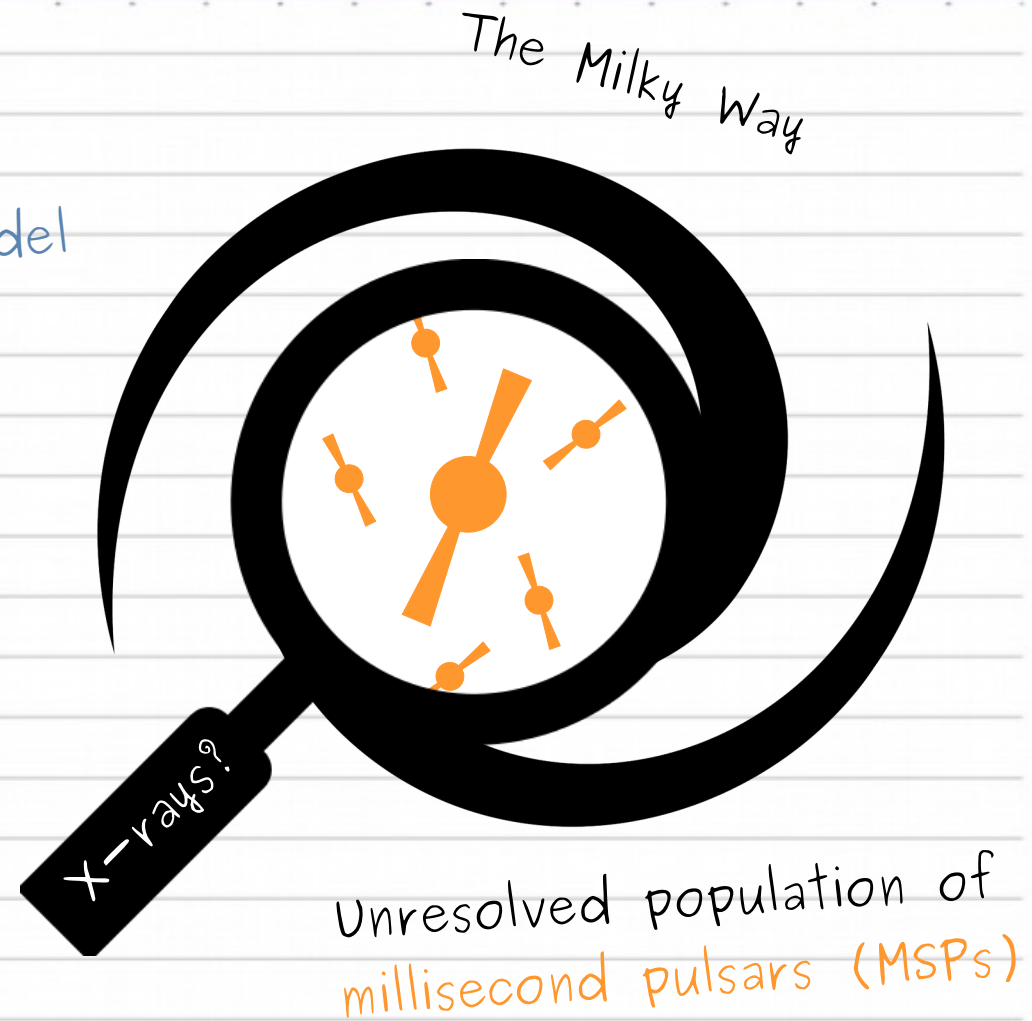
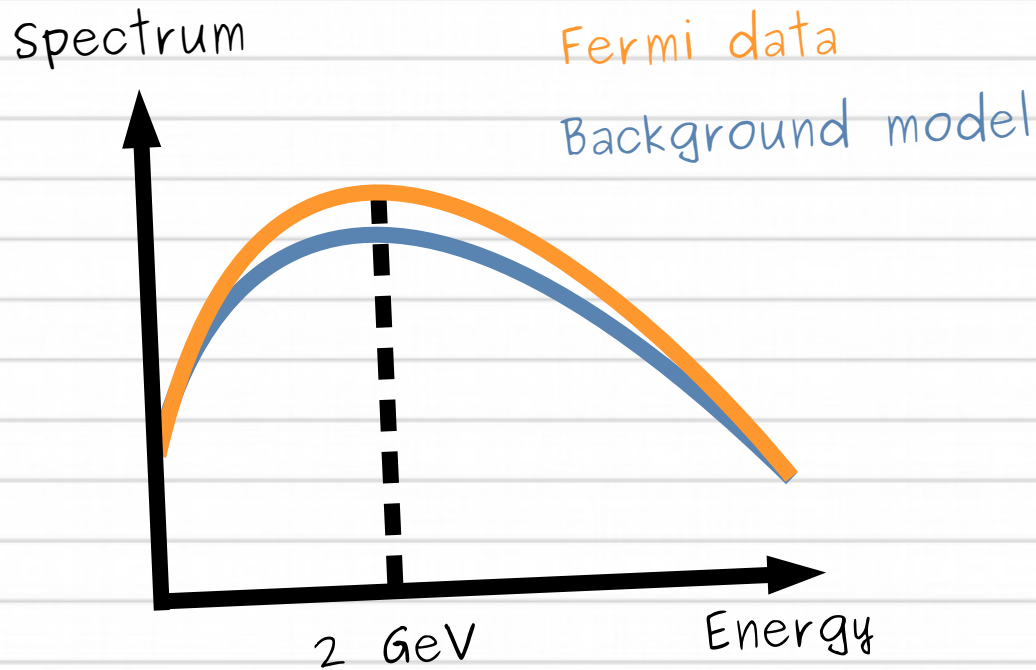
[arXiv:1011.4275], [arXiv:1207.6047]

The GeV excess and the MSP hypothesis

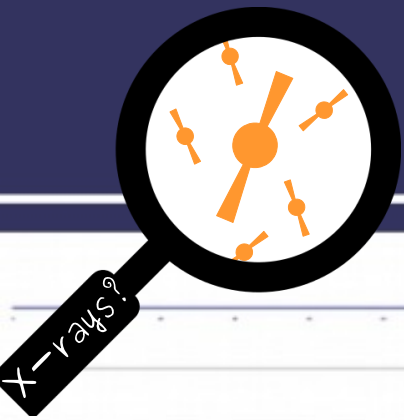


[arXiv:1011.4275], [arXiv:1207.6047]

The GeV excess and the MSP hypothesis



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simulating the MSP population

Identical to the excess:

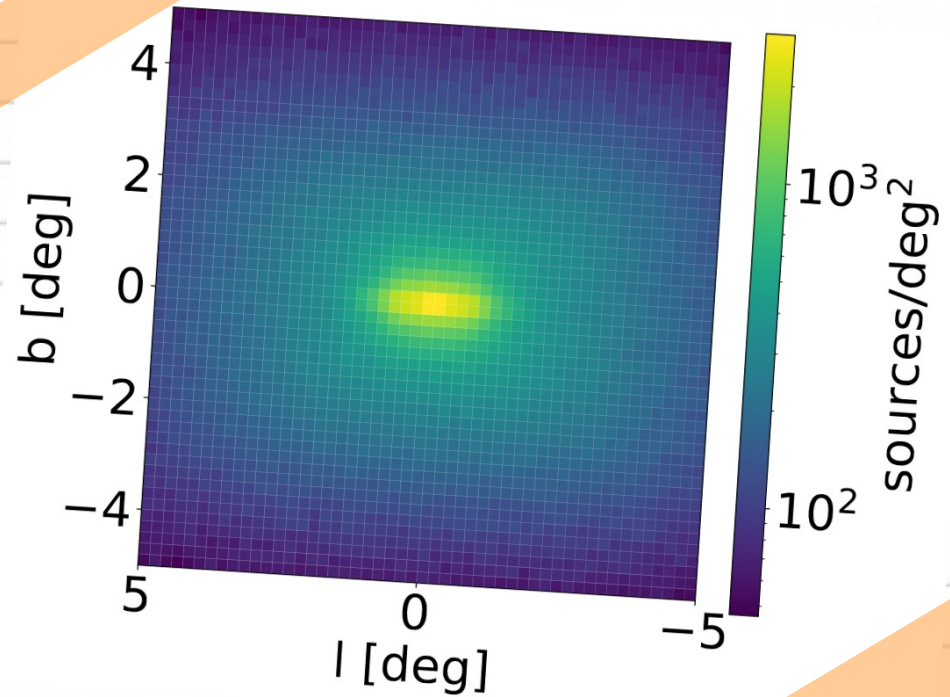
- ☑ Spatial morphology
- ☑ Total γ -ray luminosity

[arXiv:1711.04778]

From γ - and X-ray data:

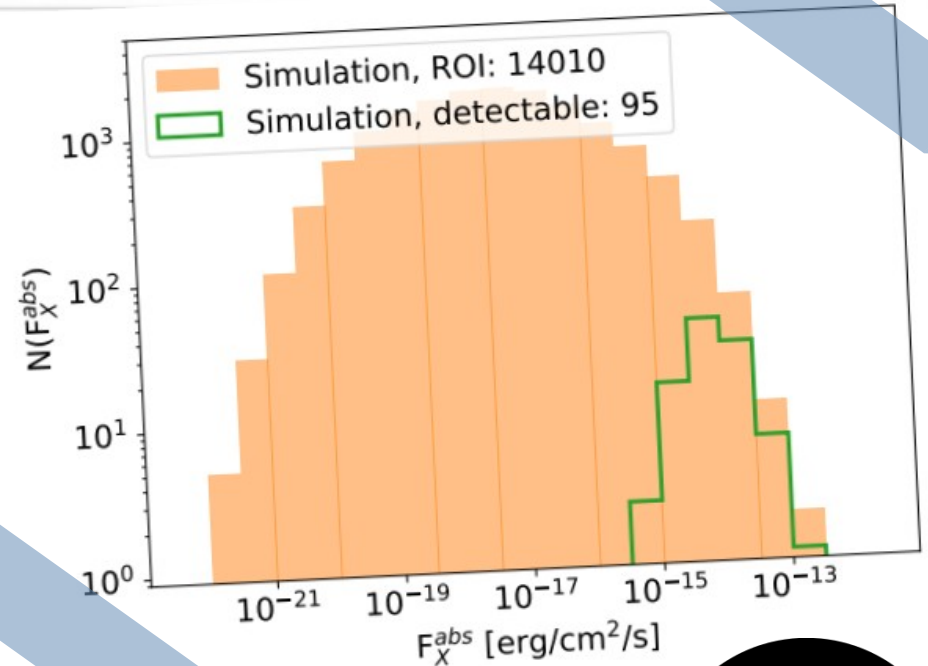
- γ -to-X MSP flux ratio

[arXiv:1807.06505], [arXiv:1902.10045]



Chandra sensitivity to the MSP population

- Chandra: X-ray observatory
- Region of interest: $6 \times 6^\circ$
about the Galactic center
- MSP flux > telescope sensitivity => detectable!



MSP candidates in Chandra data

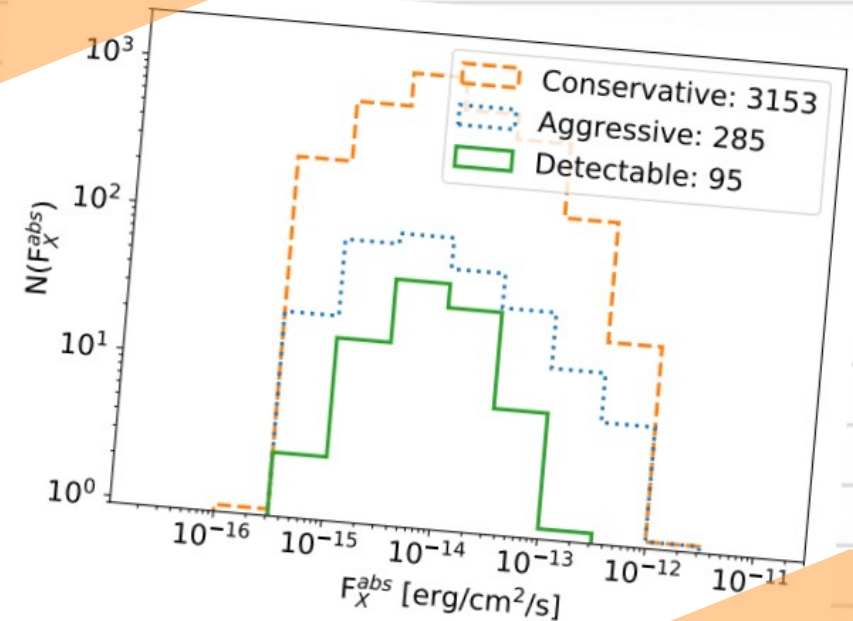
- Data = unidentified sources

[arXiv:1005.4665]

Candidates should have:

- a power-law X-ray spectrum
- an intermediate distance to us
- a very faint/no optical (Gaia) counterpart

[arXiv:2011.0875]



Prospects and conclusion

- The MSP hypothesis is not excluded by current data, more information in [\[arXiv:2012.03580\]](#)
- Interesting and reduced population of promising candidates for follow-up studies
- Potential future detections of Galactic Center MSPs



Thank you for your attention!

