

Paddy Fox: Research interests

Model building

General Solution to the U(1)

Anomaly Equations

[Costa, Dobrescu, Fox]

[arXiv:1905.13729](https://arxiv.org/abs/1905.13729)

Working on extensions to multiple U(1)'s

Signals of Compositeness in the Neutrino Sector

[Chacko, Fox, Harnik, Liu]

(to appear)

Dark Matter

Luminous Signals of Inelastic Dark Matter in Large Detectors

[Eby, Fox, Harnik, Kribs]

[arXiv:1904.09994](https://arxiv.org/abs/1904.09994)

Working on application to MiDM (rule it out?)

Dark Tridents at Off-Axis Liquid Argon Neutrino Detectors

[de Gouvea, Fox, Harnik, Kelly, Zhang]

[arXiv:1809.06388](https://arxiv.org/abs/1809.06388)

Ongoing related work: using DUNE-GAr (MPD) to search for dark sectors

Analyzing the Gamma-Ray Sky with Wavelets

[Balaji, Cholis, Fox, McDermott]

[arXiv:1803.01952](https://arxiv.org/abs/1803.01952)

Finishing up extension to Fermi-4FGL

Collider Pheno

Beyond the Standard Model Physics at the HL-LHC and HE-LHC

[Convener/editor + ~150 of closest friends]

[arXiv:1812.07831](https://arxiv.org/abs/1812.07831)

Bino Phenomenology at the LHC

[Fox, Gehrlein, Ipek]

[arXiv:1901.09284](https://arxiv.org/abs/1901.09284)

Top-philic Z' forces at the LHC

[Fox, Low, Zhang]

[arXiv:1801.03505](https://arxiv.org/abs/1801.03505)

40MHz Scouting

[Fox, Low]



Machine Learning – improve tracking in high pile up environment

QIS – solvable field theories,..?