Anson Hook

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EDUCATION

2018 – Present	**University of Maryland**, College Park, MD *Assistant Professor*
2015 – 2018	**Stanford University**, Stanford, USA *Postdoctoral Scholar* *Advisor*: Prof. Savas Dimopoulos
2012 – 2015	**Institute for Advanced Study**, Princeton, USA *Postdoctoral Scholar* *Advisor*: Prof. Nima Arkani-Hamed
2008 – 2012	**Stanford University**, Palo Alto, USA *PhD* *Advisor*: Prof. Jacob Wacker
2004 – 2008	**Princeton University**, New Jersey, USA *B. A. – June 2008* *Advisor*: Prof. Lian Tao Wang

RESEARCH INTERESTS

- Gauge theories: supersymmetry, dualities, confinement
- Theoretical particle physics beyond the Standard Model: model building, supersymmetry breaking, strong CP problem, gauge unification, naturalness
- Particle discovery: collider physics, new discovery modes, jet substructure, cosmology

PUBLICATIONS

1. A. Hook and J. Huang, *"Probing axions with neutron star inspirals and other stellar processes,"* arXiv:1708.08464 [hep-ph].
2. A. Hook and J. Huang, *"Bounding millimagnetically charged particles with magnetars,"* arXiv:1705.01107 [hep-ph].
3. N. Blinov and A. Hook, *"Particle Asymmetries from Quantum Statistics,"* arXiv:1703.04759 [hep-ph].
4. N. Arkani-Hamed, T. Cohen, R. T. D'Agnolo, A. Hook, H. D. Kim and D. Pinner, *"Nnaturalness,"* arXiv:1607.06821 [hep-ph].
5. A. Hook and G. Marques-Tavares, *"Relaxation from particle production,"* arXiv:1607.01786 [hep-ph].
6. S. Dimopoulos, A. Hook, J. Huang and G. Marques-Tavares, *"A collider observable QCD axion,"* arXiv:1606.03097 [hep-ph].

7. N. Blinov and A. Hook, *"Solving the Wrong Hierarchy Problem,"* JHEP **1606**, 176 (2016) arXiv:1605.03178 [hep-ph].

8. A. Hook, *"Baryogenesis in a CP invariant theory,"* JHEP **1511**, 143 (2015) arXiv:1508.05094 [hep-ph].

9. R. T. D'Agnolo and A. Hook, *"Finding the Strong CP problem at the LHC,"* Phys. Lett. B **762**, 421 (2016) arXiv:1507.00336 [hep-ph].

10. R. T. D'Agnolo and A. Hook, *"Selfish Dark Matter,"* Phys. Rev. D **91**, no. 11, 115020 (2015) arXiv:1504.00361 [hep-ph].

11. A. Hook and H. Murayama, *"Low-energy Supersymmetry Breaking Without the Gravitino Problem,"* Phys. Rev. D **92**, no. 1, 015004 (2015) arXiv:1503.04880 [hep-ph].

12. A. Hook, *"Anomalous solutions to the strong CP problem,"* Phys. Rev. Lett. **114**, no. 14, 141801 (2015) arXiv:1411.3325 [hep-ph].

13. K. Blum, A. Hook and K. Murase, *"High energy neutrino telescopes as a probe of the neutrino mass mechanism,"* arXiv:1408.3799 [hep-ph].

14. A. Hook and A. Katz, *"Unbroken $SU(2)$ at a 100 TeV collider,"* JHEP **1409**, 175 (2014) arXiv:1407.2607 [hep-ph].

15. A. Hook, J. Kearney, B. Shakya and K. M. Zurek, *"Probable or Improbable Universe? Correlating Electroweak Vacuum Instability with the Scale of Inflation,"* JHEP **1501**, 061 (2015) arXiv:1404.5953 [hep-ph].

16. A. Hook, *"Baryogenesis from Hawking Radiation,"* Phys. Rev. D **90**, no. 8, 083535 (2014) arXiv:1404.0113 [hep-ph].

17. A. Hook, *"New self dualities and duality cascades,"* Phys. Rev. D **89**, 086009 (2014) [arXiv:1402.2275 [hep-th]].

18. A. Hook, S. Kachru, G. Torroba and H. Wang, *"Emergent Fermi surfaces, fractionalization and duality in supersymmetric QED,"* JHEP **1408**, 031 (2014) [arXiv:1401.1500 [hep-th]].

19. A. Hook and G. Torroba, *"S-duality of nonsupersymmetric gauge theories,"* Phys. Rev. D **89**, no. 2, 025006 (2014) [arXiv:1309.5948 [hep-th]].

20. A. Hook, *"Measuring SUSY quartics from stop decays,"* JHEP **1310**, 114 (2013) [arXiv:1309.1465 [hep-ph]].

21. A. Hook, S. Kachru and G. Torroba, *"Supersymmetric Defect Models and Mirror Symmetry,"* JHEP **1311**, 004 (2013) [arXiv:1308.4416 [hep-th]].

22. S. El Hedri and A. Hook, *"Minimal Signatures of Naturalness,"* JHEP **1310**, 105 (2013) [arXiv:1305.6608 [hep-ph]].

23. S. El Hedri, A. Hook, M. Jankowiak and J. G. Wacker, *"Learning How to Count: A High Multiplicity Search for the LHC,"* JHEP **1308**, 136 (2013) [arXiv:1302.1870, arXiv:1302.1870 [hep-ph]].

24. A. Hook, *"A Test for emergent dynamics,"* JHEP **1207**, 040 (2012) [arXiv:1204.4466 [hep-th]].

25. T. Cohen, A. Hook and G. Torroba, *"An Attractor for Natural Supersymmetry,"* Phys. Rev. D **86**, 115005 (2012) [arXiv:1204.1337 [hep-ph]].

26. A. Hook, E. Izaguirre, M. Lisanti and J. G. Wacker, *"High Multiplicity Searches at the LHC Using Jet Masses,"* Phys. Rev. D **85**, 055029 (2012) [arXiv:1202.0558 [hep-ph]].

27. T. Cohen, A. Hook and B. Wecht, *"Comments on Gaugino Screening,"* Phys. Rev. D **85**, 115004 (2012) [arXiv:1112.1699 [hep-ph]].

28. N. Craig, R. Essig, A. Hook, G. Torroba, *"Phases of N=1 supersymmetric chiral gauge theories,"* [arXiv:1110.5905 [hep-th]].

29. N. Craig, R. Essig, A. Hook, G. Torroba, *"New dynamics and dualities in supersymmetric chiral gauge theories,"* JHEP **1109**, 046 (2011) [arXiv:1106.5051 [hep-th]].

30. A. Hook, *"Unitarity constraints on asymmetric freeze-in,"* Phys. Rev. D **84**, 055003 (2011) [arXiv:1105.3728 [hep-ph]].

31. A. Hook, G. Torroba, *"A Microscopic theory of gauge mediation,"* JHEP **1108**, 113 (2011) [arXiv:1104.2331 [hep-ph]].

32. A. Hook, M. Jankowiak, J. G. Wacker, *"Jet Dipolarity: Top Tagging with Color Flow,"* [arXiv:1102.1012 [hep-ph]].

33. A. Hook, E. Izaguirre, J. G. Wacker, *"Model Independent Bounds on Kinetic Mixing,"* [arXiv:1006.0973 [hep-ph]].

34. A. Hook, J. G. Wacker, *"Collective Quartics from Simple Groups,"* JHEP **1006**, 041 (2010) [arXiv:0912.0937 [hep-ph]].