

Hamsa Padmanabhan - list of publications

(A) In refereed journals:

2021

1. Tobias Nadolny, Ruth Durrer, Martin Kunz, **Hamsa Padmanabhan**, *A new test of the Cosmological Principle: measuring our peculiar velocity and the large scale anisotropy independently*, submitted, arXiv:2106.05284[astro-ph.CO]
2. **Hamsa Padmanabhan**, Patrick Breysse, Adam Lidz and Eric. R. Switzer (2021), *Intensity mapping from the sky: synergizing the joint potential of [OIII] and [CII] surveys at reionization*, submitted, arXiv: 2105.12148 [astro-ph.GA]
3. Chung et al. (including **Hamsa Padmanabhan**), *A model of spectral line broadening in signal forecasts for line-intensity mapping experiments*, submitted, arXiv:2104.11171[astro-ph.CO].
4. **Hamsa Padmanabhan**, Abraham Loeb (2021), *Distinguishing AGN from starbursts as the origin of double peaked Lyman-Alpha Emitters in the reionization era*, A&A Letters, 646, 10, arXiv:2012.00014.
5. **Hamsa Padmanabhan**, Abraham Loeb (2021), *GN-z11-flash: A shock-breakout in a Population III supernova at Cosmic Dawn?*, submitted, arXiv:2101.12222.
6. Obinna Umeh, Roy Maartens, **Hamsa Padmanabhan** and Stefano Camera, *The effect of finite halo size on the clustering of neutral hydrogen*, JCAP in press, arXiv:2102.06116[astro-ph.CO].
7. Jurek Bauer, David Marsh, Renée Hložek, **Hamsa Padmanabhan**, Alex Laguë (2021), *Intensity Mapping as a Probe of Axion Dark Matter*, MNRAS 500, 3, 3162, arXiv:2003.09655[astro-ph.CO].

2020

8. **Hamsa Padmanabhan**, Abraham Loeb (2020), *Constraining the host galaxy halos of massive black holes from LISA event rates*, JCAP 11, 055, arXiv:2007.12710.
9. Stefano Camera and **Hamsa Padmanabhan** (2020), *Beyond Λ CDM with HI intensity mapping: robustness of cosmological constraints in the presence of astrophysics*, MNRAS 496, 4115, arXiv:1910.00022 [astro-ph.CO].
10. **Hamsa Padmanabhan**, Abraham Loeb (2020), *New empirical constraints on the cosmological evolution of gas and stars in galaxies*, MNRAS 496, 2, 1124, arXiv:2002.01489.
11. **Hamsa Padmanabhan**, Abraham Loeb (2021), *Contribution of Flares from Tidal Disruption of Stars to high-redshift AGN*, A&A accepted, arXiv:2003.07365.

12. **Hamsa Padmanabhan**, Alexandre Refregier, Adam Amara (2020), *Cross-correlating 21 cm and galaxy surveys: implications for cosmology and astrophysics*, MNRAS, 495, 4, 3935, arXiv:1909.11104.
13. **Hamsa Padmanabhan**, Abraham Loeb (2020), *It is Feasible to Directly Measure Black Hole Masses in the First Galaxies*, JCAP 03, 032, arXiv:1912.05555
14. *Fundamental Physics with the Square Kilometre Array*¹, Weltman, A.[†], Bull, P.*, Camera, S.*, Kelley, K.*, **Padmanabhan, H.***, Pritchard, J.*, . . . Gaensler, B.[‡] (2020), Publications of the Astronomical Society of Australia, 37, E002. doi:10.1017/pasa.2019.42, arXiv:1810.02680

2019

15. **Hamsa Padmanabhan** (2019), *Constraining the evolution of CII intensity through the end stages of reionization*, MNRAS 488, 3, 3014, arXiv:1811.01968.
16. **Hamsa Padmanabhan**, Alexandre Refregier, Adam Amara (2019), *Impact of astrophysics on cosmology forecasts with 21 cm surveys*, MNRAS 485 (3), 4060, arXiv:1804.10627 [astro-ph.CO]
17. Chung et al. (including **Hamsa Padmanabhan**), *Cross-correlating Carbon Monoxide Line-intensity Maps with Spectroscopic and Photometric Galaxy Surveys*, The Astrophysical Journal 872 (2), 186, arXiv:1809.04550 [astro-ph.GA].

2018

18. **Hamsa Padmanabhan** (2018), *Constraining the CO intensity mapping power spectrum at intermediate redshifts*, MNRAS 475 (2), 1477, arXiv:1706.01471 [astro-ph.GA].
19. Ihle et al. (including **Hamsa Padmanabhan**), *Joint power spectrum and voxel intensity distribution forecast on the CO luminosity function with COMAP*, The Astrophysical Journal 871 (1), 75, arXiv:1808.07487 [astro-ph.CO].
20. Square Kilometre Array Cosmology Science Working Group : Bacon et al. (including **Hamsa Padmanabhan**), *Cosmology with Phase 1 of the Square Kilometre Array; Red Book 2018: Technical specifications and performance forecasts*, Publ. Astron. Soc. Austral. 37 (2020) e007, arXiv:1811.02743

2017

21. **Hamsa Padmanabhan**, Alexandre Refregier, Adam Amara (2017), *A halo model for cosmological neutral hydrogen : abundances and clustering*, MNRAS 469 (2), 2323, arXiv:1611.06235 [astro-ph.CO].
22. **Hamsa Padmanabhan**, Girish Kulkarni (2017), *Constraints on the evolution of the relationship between HI mass and halo mass in the last 12 Gyr*, MNRAS 470 (1), 340, arXiv:1608.00007 [astro-ph.GA].

^{1†}: editor, *: co-lead, [‡]: convenor

23. **Hamsa Padmanabhan**, Alexandre Refregier (2017), *Constraining a halo model for cosmological neutral hydrogen*, MNRAS 464(4), 4008, arXiv:1607.01021 [astro-ph.CO].
24. T. Padmanabhan, **Hamsa Padmanabhan**, *Cosmic Information, the Cosmological Constant and the Amplitude of primordial perturbations*, Phys. Letts. B 773 (2017) 81 - 85, arXiv:1703.06144 [gr-qc]
25. T. Padmanabhan, **Hamsa Padmanabhan**, *Quantum gravity at Hubble scales determines the cosmological constant and the amplitude of primordial perturbations*, Int. Jour. Mod. Phys., D 26, 1743002 (2017) ²

2016

26. **Hamsa Padmanabhan**, T. Roy Choudhury, Alexandre Refregier (2016), *Modelling the cosmic neutral hydrogen from DLAs and 21 cm observations*, MNRAS 458, 781, arXiv:1505.00008 [astro-ph.CO].
27. Aseem Paranjape, T. Roy Choudhury, **Hamsa Padmanabhan**, *Photon number conserving models of HII bubbles during reionization*, MNRAS 460(2), 1801-1810 (2016), arXiv:1512.01345 [astro-ph.CO].

2015

28. **Hamsa Padmanabhan**, T. Roy Choudhury, Alexandre Refregier, *Theoretical and observational constraints on the HI intensity power spectrum*, MNRAS 447(2015), 3745, arXiv:1407.6366 [astro-ph.CO].
29. **Hamsa Padmanabhan**, R. Srianand, T. Roy Choudhury (2015), *Measuring the equation of state of the high- z intergalactic medium using curvature statistics*, MNRAS Letters 450, L29-L33, arXiv:1502.05140 [astro-ph.CO].

2014

30. T. Padmanabhan, **Hamsa Padmanabhan**, *Cosmological Constant from the Emergent Gravity Perspective*³ Int. Jour. Mod. Phys. D. Vol. 23, No. 6 (2014) 1430011, arXiv:1404.2284 [gr-qc].
31. Barun Kumar Pal, **Hamsa Padmanabhan**, Supratik Pal, *Towards reconstruction of unlensed, intrinsic CMB power spectra from lensed map*, MNRAS 439 (2014), 3022, arXiv:1309.1827 [astro-ph.CO].
32. **Hamsa Padmanabhan**, T. Roy Choudhury, R. Srianand (2014), *Probing reionization using quasar near-zones at redshift $z \sim 6$* , MNRAS 443, 3761, arXiv:1403.0221 [astro-ph.CO].

2013

²The essay, based on this work, received the Honorable mention in the 2017 Gravity Research Foundation Essay Competition and is published in this Special Issue.

³Invited review article.

33. **Hamsa Padmanabhan**, Aditya Rotti, Tarun Souradeep (2013), *Comparison of CMB lensing efficiency of gravitational waves and large scale structure*, Phys.Rev. D 88, 063507, arXiv:1307.2355 [astro-ph.CO].
34. **Hamsa Padmanabhan**, T. Padmanabhan (2013), *CosMin: The Solution to the Cosmological Constant Problem*, IJMPD 22, 1342001, arXiv:1302.3226 [astro-ph.CO].⁴

2011

35. **Hamsa Padmanabhan** and T. Padmanabhan (2011), *Nonrelativistic limit of quantum field theory in inertial and noninertial frames and the principle of equivalence*, Phys. Rev. D 84, 085018, arXiv:1110.1314 [gr-qc].

2010

36. **Hamsa Padmanabhan** and T. Padmanabhan (2010), *Aspects of electrostatics in a weak gravitational field*, General Relativity and Gravitation, Volume 42, Issue 5, 1153, arXiv:0910.0926 [gr-qc].

2009

37. **Hamsa Padmanabhan** (2009), *A simple derivation of the electromagnetic field of an arbitrarily moving charge*, Am. J. Phys. 77, 151, arXiv:0810.4246

(B) Collaboration white papers:

- *Inflation and Early Dark Energy with a Stage II Hydrogen Intensity Mapping experiment* (2019), Cosmic Visions 21 cm Collaboration : Ansari et al. (including **Hamsa Padmanabhan**), arXiv:1810.09572
- *Packed Ultra-wideband Mapping Array (PUMA): A Radio Telescope for Cosmology and Transients* (2019), Bandura et al. (including **Hamsa Padmanabhan**), arXiv:1907.12559
- *The DESI Experiment Part I: Science, Targeting, and Survey Design*, DESI Collaboration: Aghamousa et al. (including **Hamsa Padmanabhan**), arXiv:1611.00036
- *The DESI Experiment Part II: Instrument Design*, DESI Collaboration: Aghamousa et al. (including **Hamsa Padmanabhan**), arXiv:1611.00037
- *Astrophysics and Cosmology with Line-Intensity Mapping*, Kovetz et al. (including **Hamsa Padmanabhan**), Astro2020 Science white paper (2019), arXiv:1903.04496
- *Inflation and Dark Energy from spectroscopy at $z > 2$* , Ferraro et al. (including **Hamsa Padmanabhan**), Astro2020 Science white paper (2019), arXiv:1903.09208
- *Primordial non-Gaussianity*, Meerberg et al. (including **Hamsa Padmanabhan**), Astro2020 Science white paper (2019), arXiv:1903.04409
- *Dark Matter Science in the Era of LSST*, Bechtol et al. (including **Hamsa Padmanabhan**), Astro2020 Science white paper (2019), arXiv:1903.04425

⁴The essay, based on this work, received the Honorable mention in the 2013 Gravity Research Foundation Essay Competition.