New Physics from the Sky

GGI workshop, October 4 to November 12

Week 1: Dark Matter	Monday 4	Tuesday 5	Wednesday 6	Thursday 7	Friday 8
12:00-13:00	Gong show: self-intro of in-person participants			12:30 **Stefan Vogl**: Spin 2 mediated Dark Matter	
16:00-	16:00 **Michele Redi**: Dark Matter from Dark Gauge Theories, 45' + discussion	16:00 **Iason Baldes**: Dark Matter During Supercooled Confinement, 35'+10' 16:45 **Juri Smirnov**: Thermal Squeezeout of Dark Matter, 35'+10' 17:30 Discussion	16:00 **Robert McGehee**: Maximizing Direct Detection with HYPER Dark Matter, 35'+ discussion	16:00 **Francesco D'Eramo**: Hot axions, 35'+discussion	16:00 **Andrea Caputo**: Axions, Dark Photons and radio data in our inhomogeneous universe, 35'+10' 16:45 **Joshua Foster**: Simulating Axion Emission from a String Network with Adaptive Mesh Refinement,35+10

Week 2: Astrophysics	Monday 11	Tuesday 12	Wednesday 13	Thursday 14	Friday 15
12:00-13:00	Gong show: self-intro of in-person participants				
16:00-	16:00 **Ken Van Tilburg**: Phenomenology of Stellar Basins, 45' + discussion	16:00 **Joshua Eby**: Terrestrial Signals from Axion Star Explosions, 35'+10' 16:45 **Hyungjin Kim**: Interstellar medium and PBHs, 35'+10' 17:30 Discussion	16:00 **Diego Blas**: Binary systems as gravitational wave detectors, 35'+discussion 17:00 **Savas Dimopoulos**: Particle Physics circa 2021, (part of GGI Tea Break)	16:00 **Jorge Martin Camalich**: Supernova bound on dark flavored sectors, 35'+10' 16:45 **Nitsan Bar**: Is there a supernova bound on axions?, 35'+10' 17:30 Discussion	16:00 **Csaba Csaki**: Crunching solution to the hierarchy problem, 45' + discussion

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Week 3: Cosmic Coincidences	Monday 18	Tuesday 19	Wednesday 20	Thursday 21	Friday 22
12:00-13:00	Gong show: self-intro of in-person participants				
16:00-	16:00 **Daniele Teresi**: Sliding Naturalness, 35'+10' 16:45 **Hyung Do Kim**: The weak scale as a trigger, 35'+10' 17:30 Discussion	16:00 **Enrico Morgante**: (Rel-)axion fragmentation, 35'+10' 16:45 **Abhishek Banerjee**: Probing Relaxion (scalars) at the precision frontier,35'+10' 17:30 Discussion	15:00 **Seth Koren**: A Cosmological Lithium Solution from N_gen = Z_Li, 35'+10' 15:45 **Tevong You**: Self-organised localisation, 35'+10' 17:00 Discussion: Can there be a history in the multiverse?	16:00 **Fabrizio Rompineve**: New Physics for Cosmological Concordance, 35'+10' 16:45 **Benedict von Harling**: Baryogenesis via gauge field production from a relaxing Higgs, 35'+10' 17:30 Discussion	16:00 **Asimina Arvanitaki**: The piezoaxionic effect, 45'+discussion

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Week 4: Cosmology	Monday 25	Tuesday 26	Wednesday 27	Thursday 28	Friday 29
12:00-13:00	Gong show: self-intro of in-person participants			Questions & Discussion	
16:00-18:00	16:00 **Joachim Kopp** Dark Matter from Cosmological Phase Transitions 35'+10' 16:45 **Marko Simonovic** Prospects for new physics from galaxy surveys 35'+10' 17:30 Discussion	16:00 **Thejs Brinkcmann** Self-interacting neutrinos, the Hubble parameter tension, and the Cosmic Microwave Background 35'+10' 16:45: **Guillermo Ballesteros** Primordial black holes as dark matter 35'+10' 17:30 Discussion	16:00 **Cristina Mondino** The discovery potential of astrometric weak lensing 35'+10' 16:45: **Marco Gorghetto** Dark Matter and Gravitational Waves from post-inflationary Axions 35'+10' 17:30 Discussion	16:00 **Sebastian Ellis** Tuning in to Radio Gravity 35'+10' 16:45: **Josh Ruderman** Pandemic Dark Matter 35'+10' 17:30 Discussion	16:00 **Nick Rodd** The Cosmic Axion Background 35'+10' 16:45 Discussion

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Week 5: Gravity Waves	Monday 1	Tuesday 2	Wednesday 3	Thursday 4	Friday 5
12:00-13:00	GGI Closed [National Holiday]	Gong show: self-intro of in-person participants			
16:00-18:00	GGI Closed [National Holiday]	16:00 **Julien Lesgourgues** A fair comparison of potential Hubble-tension-solving cosmological models 30'+15' 16:45 **Jeff Dror** Supermassive black hole binaries as particle physics laboratories 30'+15'	16:00 **Matteo Fasiello** Testing the Early Universe with Primordial Messengers 30'+15' 16:45 **Daniel Egana-Ugrinovic** Probing ultra-light bosons with stellar tidal disruption events 30'+15'	16:00 **Djuna Croon** A new proposal towards phase transition phenomenology 30'+15' 16:45 **Sébastien Renaux-Petel** Probing primordial features with the Stochastic Gravitational Wave Background 30'+15'	15:00 **Giovanni Villadoro** Informal discussion on perturbative expansions in field theory 30'+15' 16:00 **Andreas Ringwald** Exploring the Cosmic History with Gravitational Waves 30'+15'

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Week 6: Symposium	Monday	Tuesday	Wednesday	Thursday	Friday
12:00-13:00	Gong show: self-intro of in-person participants			Aperitivo and in person discussion	Aperitivo and in person discussion
In Person (Room A) **Online**	16:00 **Yonit Hochberg** Light dark matter 16:20 **Junwu Huang** Ultralight DM 16:40 **Eric Kuflik** Exotic/heavy DM 17:00 **Alyson Brooks** Status of DM Small Scale Crisis	16:00 **LianTao Wang** Gravitational wave signals from an inflation triggered phase transition 16:20 **Kfir Blum** Galactic structure and H0 from gravitational lensing 16:40 **Ben Safdi** X-rays as probes of axion physics	16:00 **Matthew McCullough** Cosmological approaches to EW fine-tuning 16:20 **Paolo Creminelli** Beyond perturbation theory in Inflation 16:40 **Xingang Chen** Primordial Features and non-Gaussianities	14:30 **Emanuele Castorina** Low and high redshift 21cm 14:50 **Julian Munoz** Neutrinos & light relics	16:00 **Géraldine Servant** Primordial GWs boosted by axions 16:20 **Masha Baryakhtar** New particle searches with GWs 16:40 **Chiara Mingarelli** Pulsar Timing Arrays
	17:20-18:00 Discussion led by **Asimina Arvanitaki**	**17:00-18:00** Discussion led by **David Curtin**	**17:00-18:00** Discussion led by **Raffaele D'Agnolo**, **Michael Geller** and **Raman Sundrum**	**15:10-16:30** Discussion led by **Cora Dvorkin** and **Julien Lesgourgues**	**17:00-18:00** Discussion led by **Pedro Schwaller** and **Liang Dai**