



# Seattle Snowmass Summer Meeting 2022

## Wednesday, July 20, 2022

### Theory Frontier: Astro-particle physics & cosmology (TF9); Theory of neutrino physics (TF11) - 214 (8:00 AM - 12:00 PM)

-Conveners: Andre de Gouvea; Daniel Green

time	[id] title	presenter
8:00 AM	M34] Fundamental Physics from Cosmic Surveys	WALLISCH, Benjamin
8:25 AM	M35] Cosmological Bootstrap	JOYCE, Austin
8:50 AM	M36] Dark Matter and Dark Sectors: from Theory to Discovery in the Lab	BARYAKHTAR, Masha
9:15 AM	M37] Dark Matter and Dark Sectors: from Theory to Discovery in the Sky	FOSTER, Joshua
9:40 AM	Coffee Break	
10:15 AM	M38] Neutrino Theory and Particle Physics	Prof. EVERETT, Lisa
10:50 AM	M39] Neutrino Theory and Nuclear Physics	WAGMAN, Michael
11:25 AM	M40] Neutrino Theory and Astrophysics & Cosmology	GROHS, Evan

# Thursday, July 21, 2022

## Theory Frontier: Effective field theory (TF02); Lattice gauge theory (TF05) - 111 (8:00 AM - 12:00 PM)

-Conveners: Zohreh Davoudi; Ethan Neil

time	[id] title	presenter
8:00 AM	<del>M25</del> EFTs for Dark Matter Phenomenology	ZHANG, Zhengkang
8:35 AM	<del>M26</del> Naturalness in Effective Field Theory	CRAIG, Nathaniel
9:10 AM	<del>M27</del> UV Constraints on IR Physics	Prof. DE RHAM, Claudia
9:45 AM	Coffee Break	
10:15 AM	<del>M28</del> Lattice Gauge Theory for HEP: Overview	DAVOUDI, Zohreh
10:25 AM	<del>M29</del> Quark and Lepton Flavor Physics	WITZEL, Oliver
10:44 AM	<del>M30</del> Nucleons and nuclei for BSM searches and neutrino physics	WAGMAN, Michael
11:03 AM	<del>M31</del> Hadron structure for HEP	LIN, Huey-Wen
11:22 AM	<del>M32</del> Lattice for BSM exploration	NEIL, Ethan
11:41 AM	<del>M33</del> Computational Trends in LGT	BOYLE, Peter

# Friday, July 22, 2022

## Theory Frontier: TF04: Theory of Scattering Amplitudes - 175 (8:00 AM - 10:00 AM)

-Conveners: Jaroslav Trnka; Zvi Bern

time	[id] title	presenter
8:00 AM	[M55] Modern Approach to Scattering Amplitudes	BERN, Zvi
8:30 AM	[M56] Amplitudes and Fundamental Physics (Zoom)	Prof. ELVANG, Henriette
9:00 AM	[M57] Amplitudes and Precision at Hadron Colliders	FEBRES CORDERO, Fernando
9:30 AM	[M58] Amplitudes and Gravitational Waves	Dr HERRMANN, Enrico

## Theory Frontier: Theory techniques for precision physics (TF06); Collider phenomenology (TF07) - 111 (8:00 AM - 12:00 PM)

-Conveners: Radja Boughezal; Shufang Su

time	[id] title	presenter
8:00 AM	[M79] Precision Theory for HEP: Overview	BOUGHEZAL, Radja
8:09 AM	[M19] Theoretical Developments in SMEFT Beyond Dim-6	PETRIELLO, Frank
8:41 AM	[M20] Theory Perspectives on the W mass	ISAACSON, Joshua
9:13 AM	[M21] Precision measurements and field theory: a virtuous cycle	Dr GARCIA GARCIA, Isabel
9:45 AM	Coffee Break	
10:15 AM	[M48] TF07 (Collider Phenomenology) Overview	SU, Shufang
10:20 AM	[M22] New Observables for Precision Collider Physics	MOULT, Ian
10:50 AM	[M23] Computational Challenges for High-Energy Colliders	MALTONI, Fabio
11:20 AM	[M24] Machine Learning for Collider Theory	KRAUSE, Claudius
11:50 AM	[M49] Discussion of TF07 Report Executive Summary	SU, Shufang

# Saturday, July 23, 2022

## Theory Frontier: String theory, quantum gravity, black holes (TF01); CFT and formal QFT (TF03) - 238 (8:00 AM - 12:00 PM)

-Conveners: Shamit Kachru; Nathaniel Craig

time	[id] title	presenter
8:00 AM	<del>A016</del> Particle Physics and String Theory	CVETIC, Mirjam
8:35 AM	<del>A017</del> Black Holes and Quantum Gravity	Prof. DONG, Xi
9:10 AM	<del>A018</del> Some New Ideas in QFT and Condensed Matter Physics	Prof. MCGREEVY, John
9:45 AM	Coffee Break	
10:15 AM	<del>A017</del> The Bootstrap	Prof. PUFU, Silviu
10:50 AM	<del>A018</del> Generalized Symmetries	SHAO, Shu-Heng
11:25 AM	<del>A019</del> The Quest to Define QFT	DEDUSHENKO, Mykola

## Theory Frontier: BSM Model Building (TF08); Quantum Information Science (TF10) - 210 (8:00 AM - 12:00 PM)

-Conveners: Graham Kribs; simon catterall

time	[id] title	presenter
8:00 AM	<del>A010</del> Model Building Into the Future	MURAYAMA, Hitoshi
8:35 AM	<del>A011</del> New Ideas in Baryogenesis	MCKEEN, David
9:10 AM	<del>A012</del> Dark Matter and Dark Sectors	FENG, Jonathan
9:45 AM	Coffee Break	
10:15 AM	<del>A013</del> Quantum Simulation	KLCO, Natalie
10:50 AM	<del>A014</del> Quantum Sensors	BERLIN, Asher
11:25 AM	<del>A015</del> Formal Aspects of Quantum Information	Prof. FAULKNER, Thomas

# Sunday, July 24, 2022

## **Theory Frontier: Discussion and frontier reports - 110 (10:00 AM - 12:00 PM)**

**-Conveners: Csaba Csaki; Aida El-Khadra; Nathaniel Craig**