Welcome to the session 124

Lattice Gauge Theory for High Energy Physics

A session co-organized by TF05, CompF02, EF06, NF06, RF01, RF03

https://indico.fnal.gov/event/44870/sessions/16348/#20201006

Conveners

- Stefan Meinel (University of Arizona)
- Zohreh Davoudi (University of Maryland)
- Huey-Wen Lin (MSU)
- Peter Boyle (Brookhaven National Laboratory)
- Ethan Neil (University of Colorado, Boulder)
- Tanmoy Bhattacharya (Los Alamos National Laboratory)
- Baha Balantekin (University of Wisconsin)
- Taku Izubuchi (Brookhaven National Laboratory)
- Thomas Blum (University of Connecticut)

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TF05: Lattice gauge theory

124	Lattice Gauge Theory for High Energy Theor	Tuesday 13:00	TF05	TF03	EF/RPF/CompF
40	Exotic Hadron Spectroscopy and Interpretati	Tuesday 15:00	TF05		EF/RPF
84	Computing Requirements & Opportunities in Theory	Wednesday 12:45	TF03	TF05	CompF
41	Anomalies in Flavor Physics	Wednesday 13:00	TF05	TF06	RPF

TF10: Quantum Information Science

102	The Roles of QIS in HEP	Tuesday 13:00	TF01	TF10	AF/IF/RPF/CompF

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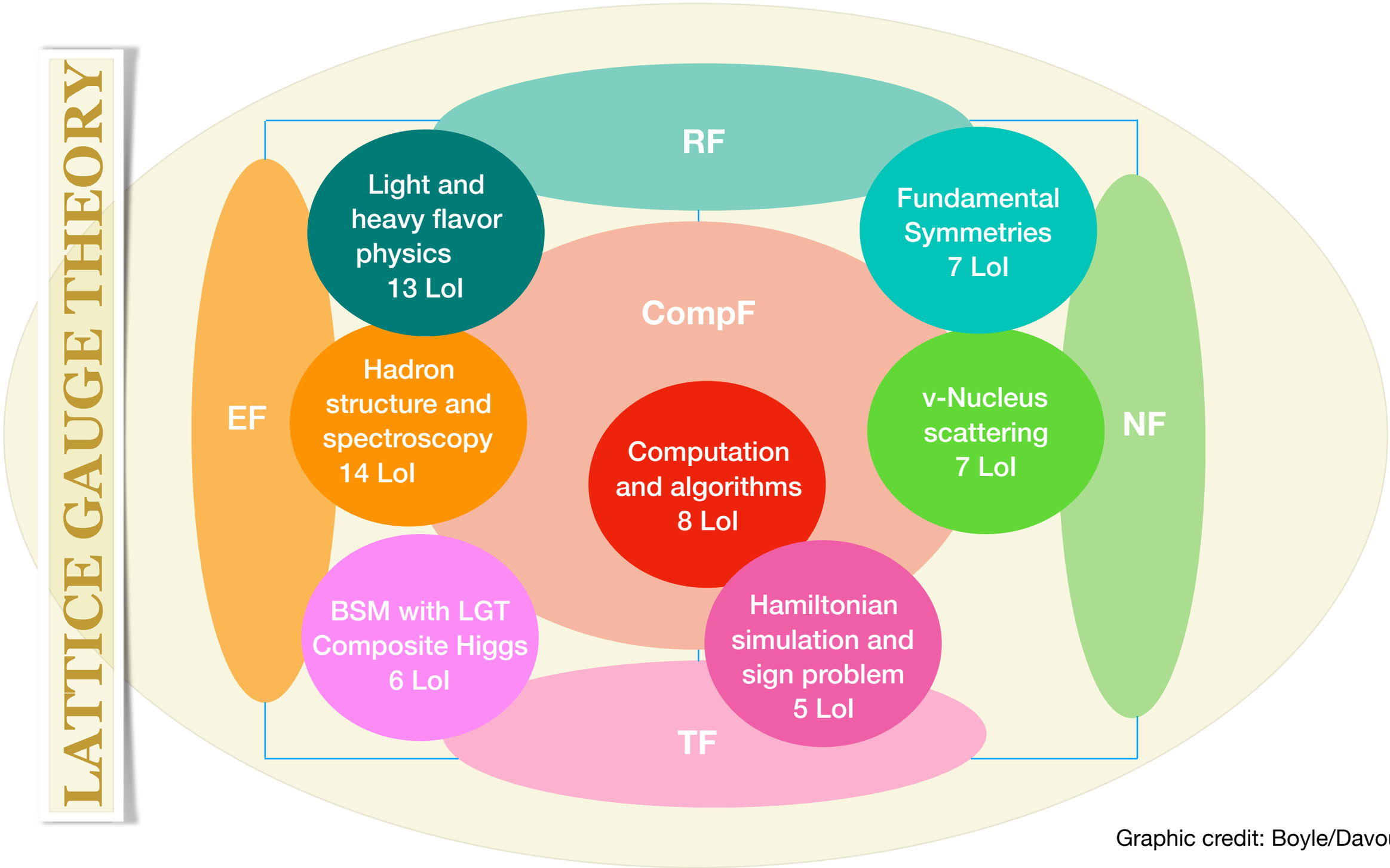
A breakdown of topics and LOIs received



Graphic credit: Boyle/Davoudi

Session's agenda

13:00	**Introduction to the session** *Zoom 11*	*Zohreh Davoudi* 13:00 - 13:03
	Hadron structure and spectroscopy brief *Zoom 11*	*Huey-Wen Lin* 13:03 - 13:10
	Light and heavy flavor physics brief *Zoom 11*	*Stefan Meinel* 13:10 - 13:17
	Fundamental Symmetries brief *Zoom 11*	*Tanmoy Bhattacharya* 13:17 - 13:23
	v-Nucleus scattering brief *Zoom 11*	*Michael Wagman* 13:23 - 13:29
	BSM with LGT brief *Zoom 11*	*Ethan Neil* 13:29 - 13:34
	Computation and algorithm brief *Zoom 11*	*Peter Boyle* 13:34 - 13:40
	Hamiltonian simulation and sign problem *Zoom 11*	*Zohreh Davoudi* 13:40 - 13:45
	Panel discussion *Zoom 11*	*Andreas Kronfeld et al.* 13:45 - 14:30
14:00		

Session's agenda

13:00

Introduction to the session
Zoom 11

Hadron structure and spectroscopy
Zoom 11

Light and heavy flavor physics brie
Zoom 11

Fundamental Symmetries brief
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v-Nucleus scattering brief
Zoom 11

BSM with LGT brief
Zoom 11

Computation and algorithm brief
Zoom 11

Hamiltonian simulation and sign pr
Zoom 11

Panel discussion *Andreas Kronfeld et al.*
Zoom 11 13:45 - 14:30

14:00

Panel discussion

Oct 6, 2020, 1:45 PM
45m
Zoom 11

124. Lattice Gauge Theor...

Speakers

- Andreas Kronfeld (Fermilab)
- Anna Hasenfratz (university of colorad...)
- Carleton DeTar (University of Utah)
- Chulwoo Jung (Brookhaven National...)
- Norman Christ (Columbia University)
- Rajan Gupta (Los Alamos National...)
- Ruth Van de Water (Fermilab)
- Sasa Prelovsek (University of Ljubljana)
- Taku Izubuchi (Brookhaven National...)

Description

Discussions will be organized around the following questions:

1) What areas of the LGT program in general, and the topic you are representing in particular, require a comprehensive study to be conducted as part of the Snowmass process in order to quantify the impact of the LGT results on improving phenomenological constraints and the overall experimental programs. i.e., are there areas for which we need to go beyond the USQCD whitepapers and do a more thorough study?

2) What are the computational, algorithmic, and human resource requirements of the program to achieve the impact identified and quantified in the previous question? What is the best HPC model that facilitates scientific progress in our community? If we were to have an input in the development of the upcoming machines and technologies, what would we propose? What is the significance of new classical algorithms, and how can they be combined with developing paradigms based on Machine Learning and Quantum Computing to expedite our scientific output already in the next decade?

SnowMass2021

APS | DIVISION OF PARTICLES & FIELDS

DPF Core Principles and Community Guidelines (CP&CG)

- By participating in this meeting, you agree to adhere to the CP&CG
  - **Respect and support community members**
  - **Commit to constructive dialogue and take initiative**
  - Details of what this means, expectations for behavior, and accountability procedures are provided in the CP&CG document linked at: https://snowmass21.org/cpcg/start

- Everyone is invited to invoke the CP&CG as needed to encourage constructive and supportive collaboration

- The conveners of this meeting are your recommended first point of contact for reports of CP&CG violations occurring here
  - The conveners have received training in the CP&CG and how to handle reports
  - The CP&CG accountability procedure is designed to encourage early intervention and is flexible enough to appropriately address issues ranging from the discourteous to the egregious
  - Please do not hesitate to contact us!

- Snowmass is most successful when everyone's voice can be heard!