

Advanced Calculus for Fundamental Interactions

Monday 10 July 2023

Session: Session 1 (09:00 - 10:25)

-Conveners: Luca Di Luzio

time	[id] title	presenter
09:00	[1] Introduction	MASTROLIA, Pierpaolo
09:10	[2] Top quark loops for precision Higgs physics	VITTI, Marco
09:35	[3] DiHiggs: A Monte Carlo for Higgs pair production at NLO	GRÖBER, Ramona
10:00	[4] Evolution strategies for string vacua	DALL'AGATA, Gianguido

Session: Session 2 (10:55 - 12:35)

-Conveners: Gianluca Inverso

time	[id] title	presenter
10:55	[5] Renormalization Group Equations and the S-matrix: a study case	LEVATI, Gabriele
11:20	[6] RGESolver : a C++ library to perform Renormalization Group evolution in the SMEFT	DI NOI, Stefano
11:45	[7] Tropical Feynman Integration	MUNCH, Henrik Jessen
12:10	[8] Computational aspects of higher-curvature gravities	MURCIA, Ángel

Session: Session 3 (14:00 - 15:40)

-Conveners: Alessandra Gnechchi

time	[id] title	presenter
14:00	[9] Gauge Invariance and γ_5 in Chiral Gauge Theories	VECCHI, Luca
14:25	[10] Computational Tools for Colliders and GW Physics	MANDAL, Manoj
14:50	[11] Hadronic decays of GeV-scale axion-like particles	SALVIONI, Ennio
15:15	[12] The computational challenge of finite-tension string theory and finite-volume QFT	SFONDRINI, Alessandro

Session: Session 4 (16:10 - 18:00)

-Conveners: Paride Paradisi

time	[id] title	presenter
16:10	[13] Exploring the connections between theoretical physics, algebra and number theory	VOLPATO, Roberto
16:35	[14] Axion kinetic misalignment as an example of my simple use of computing infrastructure	SOERENSEN, Philip
17:00	[15] Introduction to Intersection Theory	CRISANTI, Giulio
17:25	[16] Feynman Integrals and Intersection Theory	BRUNELLO, Giacomo

17:50	[17] Conclusions	
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