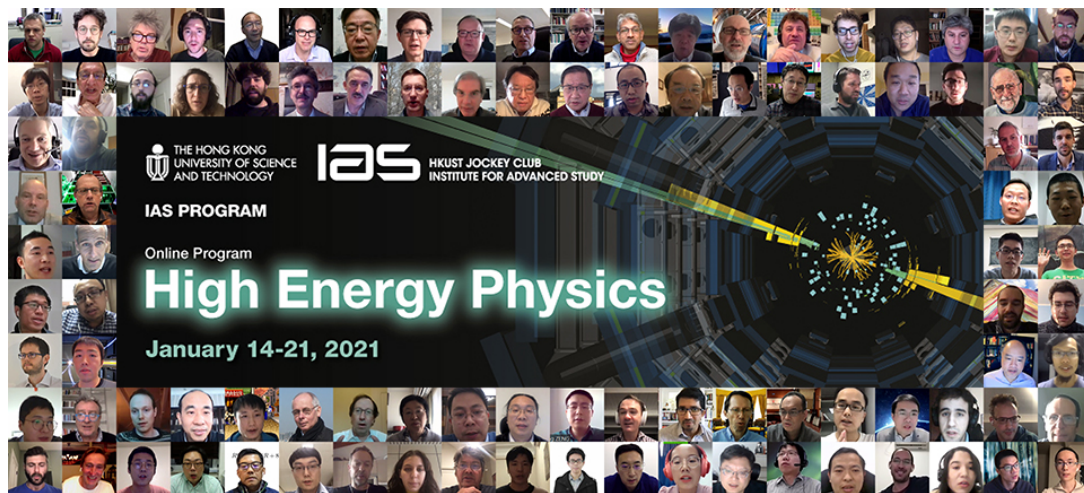


## Session Program

14-21 Jan 2021



## IAS Program on High Energy Physics (HEP 2021)

### *Mini-workshop: Theory*

Online via Zoom

# Thursday 14 January

12:58

## Mini-workshop: Theory: Day 1 - Session 1: Machine Learning and Open Data (MW-TH-D1-S1)

**Session** | **Location:** Online via Zoom | **Convener:** Tao LIU

12:58–13:00 **Opening Remarks**

**Speaker**

Tao LIU

13:00–13:30 **#1: Learning the Geometry of Collider Events**

**Speaker**

Jack COLLINS

13:30–14:00 **#2: Morphology for Jet Classification**

**Speaker**

Mihoko NOJIRI

14:00–14:30 **#3: Searching for Top Super Partner in the CMS Open Data**

**Speaker**

Haipeng AN

14:30

14:40

## Mini-workshop: Theory: Day 1 - Session 2: Physics at Future Colliders (MW-TH-D1-S2)

**Session** | **Location:** Online via Zoom | **Convener:** Jiayin GU

14:40–15:10 **#1: Higgs and Top Precision with EFT**

**Speaker**

Sunghoon JUNG

15:10–15:40 **#2: Testing Electroweak Phase Transition at Muon Colliders**

**Speaker**

Ke-Pan XIE

15:40–16:10

**#3: Two Paths Towards Precision at a Very High Energy Lepton Collider**

**Speaker**

Roberto FRANCESCHINI

16:10

21:00

## Mini-workshop: Theory: Day 1 - Session 3: Quantum Sensing for New Physics (MW-TH-D1-S3)

**Session** | **Location:** Online via Zoom | **Convener:** Zhen LIU

21:00–21:30 **#1: Direct Deflection of Dark Matter**

**Speaker**

Asher BERLIN

21:30–22:00 **#2: Probing New Physics at the Precision Frontier**

22:30

22:40

00:40

**Speaker**

Yotam SOREQ

22:00–22:30

**#3: Searching for Dark Particles with Nonlinear Optics****Speaker**

Roni HARNIK

**Mini-workshop: Theory: Day 1 - Session 4: EFT and Amplitudes (MW-TH-D1-S4)****Session** | **Location:** Online via Zoom | **Convener:** Zhen LIU

22:40–23:10

**#1: On-shell Formulation of Chiral Perturbation Theory****Speaker**

Ian LOW

23:10–23:40

**#2: Microscopic Bounds on Macroscopic Theories****Speaker**

Francesco RIVA

23:40–00:10

**#3: The Geometric SMEFT****Speaker**

Adam MARTIN

# Friday 15 January

00:10

## Mini-workshop: Theory: Day 1 - Session 4: EFT and Amplitudes (MW-TH-D1-S4)

**Session** | **Location:** Online via Zoom | **Convener:** Zhen LIU

00:10–00:40

### #4: Partial Wave Amplitude Basis and Selection Rules in Effective Field Theories

**Speaker**

Jing SHU

00:40

13:00

## Mini-workshop: Theory: Day 2 - Session 1: Quantum Sensing for New Physics (MW-TH-D2-S1)

**Session** | **Location:** Online via Zoom | **Convener:** Jia LIU

13:00–13:30

### #1: Detecting Light Dark Matter with Phonons and Magnons

**Speaker**

Zhengkang ZHANG

13:30–14:00

### #2: Mechanical Quantum Sensors in the Search for Dark Matter

**Speaker**

Daniel CARNEY

14:00–14:30

### #3: Resonant and Broadband Detection of Ultralight Axion Dark Matter

**Speaker**

Raffaele Tito D'AGNOLO

14:30

14:40

## Mini-workshop: Theory: Day 2 - Session 2: EFT and Amplitudes (MW-TH-D2-S2)

**Session** | **Location:** Online via Zoom | **Convener:** Hao ZHANG

14:40–15:10

### #1: Positivity in Multi-field EFTs

**Speaker**

Cen ZHANG

15:10–15:40

### #2: An Unambiguous Test of Positivity at Lepton Colliders

**Speaker**

Jiayin GU

15:40–16:10

### #3: On-shell Massive Effective Field Theory

**Speaker**

Teng MA

16:10

21:00

## Mini-workshop: Theory: Day 2 - Session 3: Machine Learning and Open Data (MW-TH-D2-S3)

**Session** | **Location:** Online via Zoom | **Convener:** Zhen LIU

21:00–21:30

### #1: Jet Topology

22:30

22:40

00:10

**Speaker**  
Lingfeng LI

21:30–22:00 **#2: New Paradigms for New Physics Searches with Machine Learning**

**Speaker**  
David SHIH

22:00–22:30 **#3: Discovering Unanticipated New Physics with Machine Learning**

**Speaker**  
Benjamin Philip NACHMAN

## Mini-workshop: Theory: Day 2 - Session 4: Physics at Future Colliders (MW-TH-D2-S4)

**Session** | **Location:** Online via Zoom | **Convener:** Zhen LIU

22:40–23:10 **#1: The Muon-Smasher's Guide**

**Speaker**  
Nathaniel CRAIG

23:10–23:40 **#2: Search for WIMP Dark Matter at High Energy Muon Colliders**

**Speaker**  
Liantao WANG

23:40–00:10 **#3: Composite Higgs Models at the High-Energy Muon Collider**

**Speaker**  
Da LIU