

**Advanced Artificial  
Intelligence for Precision  
High Energy Physics**

**Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Machine learning techniques

*Monday, July 17, 2023 9:00 AM (2 hours)*

[https://www.thphys.uni-heidelberg.de/~plehn/pics/modern\\_ml.pdf](https://www.thphys.uni-heidelberg.de/~plehn/pics/modern_ml.pdf)

**Presenter:** PLEHN, Tilman (Heidelberg University)

Contribution ID: 2

Type: **not specified**

# Quantum Chromodynamics

*Monday, July 17, 2023 11:30 AM (2 hours)*

**Presenter:** SMILLIE, Jennifer (Higgs Centre for Theoretical Physics, Edin. U.)

Contribution ID: 3

Type: **not specified**

**Click on the materials for a link to a Github repository containing all jupyter notebooks used during the tutorials**

*Monday, July 17, 2023 3:00 PM (2h 30m)*

**Presenter:** STEGEMAN, Roy

Contribution ID: 4

Type: **not specified**

## Machine learning techniques

*Tuesday, July 18, 2023 9:00 AM (2 hours)*

**Presenter:** PLEHN, Tilman (Heidelberg University)

Contribution ID: 5

Type: **not specified**

## Quantum Chromodynamics

*Tuesday, July 18, 2023 11:30 AM (2 hours)*

**Presenter:** SMILLIE, Jennifer (Higgs Centre for Theoretical Physics, Edin. U.)

Contribution ID: 6

Type: **not specified**

## **Tutorials: (NLO) theory predictions crash course**

*Tuesday, July 18, 2023 3:00 PM (2h 30m)*

**Presenter:** Mr SCHWAN, Christopher (Universität Würzburg)

Contribution ID: 7

Type: **not specified**

## Machine learning techniques

*Wednesday, July 19, 2023 9:00 AM (2 hours)*

**Presenter:** PLEHN, Tilman (Heidelberg University)



Contribution ID: 8

Type: **not specified**

## Quantum Chromodynamics

*Wednesday, July 19, 2023 11:30 AM (2 hours)*

**Presenter:** SMILLIE, Jennifer (Higgs Centre for Theoretical Physics, Edin. U.)

Contribution ID: 9

Type: **not specified**

## **Tutorials: PDF and couplings evolution**

*Wednesday, July 19, 2023 3:00 PM (2h 30m)*

**Presenter:** MAGNI, Giacomo (Nikhef, VU Amsterdam)

Contribution ID: 10

Type: **not specified**

## Machine learning techniques

*Thursday, July 20, 2023 9:00 AM (2 hours)*

**Presenter:** PLEHN, Tilman (Heidelberg University)

Contribution ID: 11

Type: **not specified**

# Quantum Chromodynamics

*Thursday, July 20, 2023 11:30 AM (2 hours)*

**Presenter:** SMILLIE, Jennifer (Higgs Centre for Theoretical Physics, Edin. U.)

Contribution ID: 12

Type: **not specified**

## Machine learning techniques

*Friday, July 21, 2023 11:30 AM (2 hours)*

**Presenter:** PLEHN, Tilman (Heidelberg University)

Contribution ID: 13

Type: **not specified**

# Quantum Chromodynamics

*Friday, July 21, 2023 9:00 AM (2 hours)*

**Presenter:** SMILLIE, Jennifer (Higgs Centre for Theoretical Physics, Edin. U.)

Contribution ID: 14

Type: **not specified**

## **Tutorials: Applying Machine Learning techniques to real life HEP problems**

*Friday, July 21, 2023 3:00 PM (2h 30m)*

**Presenter:** Dr CRUZ MARTINEZ, Juan M. (CERN)

Contribution ID: 15

Type: **not specified**

## **Bayesian methods and data analysis**

*Monday, July 24, 2023 9:00 AM (2 hours)*

**Presenter:** PIERINI, Maurizio (CERN)



Contribution ID: 16

Type: **not specified**

## Quantum Machine Learning

*Monday, July 24, 2023 11:30 AM (2 hours)*

**Presenter:** GARCIA, Artur (Barcelona Supercomputing Center)

Contribution ID: 17

Type: **not specified**

## Tutorials: Bayesian inference tools

*Monday, July 24, 2023 3:00 PM (2h 30m)*

**Presenter:** GIANI, Tommaso (Nikhef National institute for subatomic physics (NL))

Contribution ID: 18

Type: **not specified**

## **Bayesian methods and data analysis**

*Tuesday, July 25, 2023 9:00 AM (2 hours)*

**Presenter:** PIERINI, Maurizio (CERN)

Contribution ID: 19

Type: **not specified**

## Quantum Machine Learning

*Tuesday, July 25, 2023 11:30 AM (2 hours)*

**Presenter:** GARCIA, Artur (Barcelona Supercomputing Center)

Contribution ID: 20

Type: **not specified**

## Tutorials: Quantum computing

*Tuesday, July 25, 2023 3:00 PM (2h 30m)*

**Presenter:** PASQUALE, Andrea (University of Milan)

Contribution ID: 21

Type: **not specified**

## **Bayesian methods and data analysis**

*Wednesday, July 26, 2023 9:00 AM (2 hours)*

**Presenter:** PIERINI, Maurizio (CERN)

Contribution ID: 22

Type: **not specified**

## Quantum Machine Learning

*Wednesday, July 26, 2023 11:30 AM (2 hours)*

**Presenter:** GARCIA, Artur (Barcelona Supercomputing Center)

Contribution ID: 23

Type: **not specified**

## Tutorials: Quantum Machine Learning

*Wednesday, July 26, 2023 3:00 PM (2h 30m)*

**Presenter:** ROBBIATI, Matteo (Università degli Studi e INFN Milano (IT))



Contribution ID: 24

Type: **not specified**

## **Bayesian methods and data analysis**

*Thursday, July 27, 2023 9:00 AM (2 hours)*

**Presenter:** PIERINI, Maurizio (CERN)

Contribution ID: 25

Type: **not specified**

## Quantum Machine Learning

*Thursday, July 27, 2023 11:30 AM (2 hours)*

**Presenter:** GARCIA, Artur (Barcelona Supercomputing Center)

Contribution ID: 26

Type: **not specified**

## **Tutorials: Exercise - SM Bayesian fit**

*Thursday, July 27, 2023 3:00 PM (2h 30m)*

**Presenter:** CANDIDO, Alessandro

Contribution ID: 27

Type: **not specified**

## **Bayesian methods and data analysis**

*Friday, July 28, 2023 9:00 AM (2 hours)*

**Presenter:** PIERINI, Maurizio (CERN)

Contribution ID: 28

Type: **not specified**

## Quantum Machine Learning

*Friday, July 28, 2023 11:30 AM (2 hours)*

**Presenter:** GARCIA, Artur (Barcelona Supercomputing Center)

Contribution ID: 29

Type: **not specified**

## Tutorials

Contribution ID: 30

Type: **not specified**

## **Tutorials: Machine Learning 101: using ML concepts and techniques for regression and classification**

*Thursday, July 20, 2023 3:00 PM (2h 30m)*

**Presenter:** BARONTINI, Andrea (Università degli studi di Milano)