

Summer School on Particle Physics

Three Generations of Matter (Fermions)

	I	II	III	
mass	2.4 MeV	1.27 GeV	171.2 GeV	0
charge	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$	0
spin	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	1
name	u up	c charm	t top	γ photon
Quarks	4.8 MeV $-\frac{1}{3}$ d down	104 MeV $-\frac{1}{3}$ s strange	4.2 GeV $-\frac{1}{3}$ b bottom	0 0 g gluon
	<2.2 eV 0 $\frac{1}{2}$ ν_e electron neutrino	<0.17 MeV 0 $\frac{1}{2}$ ν_μ muon neutrino	<15.5 MeV 0 $\frac{1}{2}$ ν_τ tau neutrino	91.2 GeV 0 1 Z weak force
	0.511 MeV -1 $\frac{1}{2}$ e electron	105.7 MeV -1 $\frac{1}{2}$ μ muon	1.777 GeV -1 $\frac{1}{2}$ τ tau	80.4 GeV ± 1 1 W^\pm weak force
Leptons				Bosons (Forces)

Report of Contributions

Contribution ID: 0

Type: **not specified**

Welcome in Udine

Monday, 8 July 2019 09:30 (30 minutes)

Saluto delle Autorità

Summary

Contribution ID: 1

Type: **not specified**

Quantum mechanics I

Monday, 8 July 2019 10:00 (1h 30m)

Primary author: PANIZZO, Giancarlo (TS)

Presenter: PANIZZO, Giancarlo (TS)

Contribution ID: 2

Type: **not specified**

Relativity I

Monday, 8 July 2019 11:30 (1 hour)

Presenter: Prof. GIANNOZZI, Paolo

Contribution ID: 3

Type: **not specified**

Relativity I

Presenter: Prof. GIANNOZZI, Paolo

Contribution ID: 4

Type: **not specified**

Relativity I

Monday, 8 July 2019 16:00 (1 hour)

Presenter: Prof. GIANNOZZI, Paolo

Contribution ID: 5

Type: **not specified**

Quantum Mechanics II

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 6

Type: **not specified**

Presentation with students

Contribution ID: 7

Type: **not specified**

Quantum Mechanics II

Tuesday, 9 July 2019 09:30 (1h 30m)

Presenter: Prof. PANIZZO, Giancarlo

Contribution ID: 8

Type: **not specified**

Relativity II

Tuesday, 9 July 2019 11:00 (1h 30m)

Presenter: Prof. GIANNOZZI, Paolo

Contribution ID: 9

Type: **not specified**

Radiation-Matter Interaction I

Presenter: Prof. COBAL, Marina

Contribution ID: 10

Type: **not specified**

Quantum Mechanics Exercises

Tuesday, 9 July 2019 16:00 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 11

Type: **not specified**

Free time with a tutor - on demand

Contribution ID: 12

Type: **not specified**

Leptons I

Monday, 15 July 2019 09:30 (2 hours)

Presenter: CAUZ, Diego (UD)

Contribution ID: 13

Type: **not specified**

Quark Flavour Physics

Monday, 15 July 2019 11:30 (1 hour)

Presenter: TONELLI, Diego (TS)

Contribution ID: 14

Type: **not specified**

Quark Flavour Physics

Monday, 15 July 2019 16:00 (1 hour)

Presenter: TONELLI, Diego (TS)

Contribution ID: 15

Type: **not specified**

Masterclass I

Friday, 19 July 2019 09:30 (1 hour)

Summary

Presenters: Dr PANIZZO, Giancarlo; Prof. COBAL, Marina; PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: **16**

Type: **not specified**

Visit to the Synchrotron

Contribution ID: 17

Type: **not specified**

Return to Udine

Friday, 26 July 2019 20:30 (1 hour)

Contribution ID: **18**

Type: **not specified**

Symmetries

Wednesday, 10 July 2019 16:00 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 19

Type: **not specified**

Radiation Matter Interactions I

Wednesday, 10 July 2019 10:30 (2 hours)

Presenter: PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 20

Type: **not specified**

Standard Model I

Wednesday, 10 July 2019 09:30 (1 hour)

Presenter: PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 21

Type: **not specified**

Quarks

Presenter: Prof. COBAL, Marina

Contribution ID: 22

Type: **not specified**

Radiation Matter Interactions II

Thursday, 11 July 2019 09:30 (1 hour)

Summary

Presenter: PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 23

Type: **not specified**

Cosmic Rays and antimatter

Thursday, 11 July 2019 10:30 (2 hours)

Summary

Presenters: VACCHI, Andrea (TS); Prof. VACCHI, Andrea

Contribution ID: 24

Type: **not specified**

Quarks I

Thursday, 11 July 2019 16:00 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 25

Type: **not specified**

Gauge Bosons II

Presenter: Prof. COBAL, Marina

Contribution ID: 26

Type: **not specified**

Quarks II

Friday, 12 July 2019 09:30 (2 hours)

Presenter: Prof. COBAL, Marina

Contribution ID: 27

Type: **not specified**

Top Quark

Friday, 12 July 2019 11:30 (1 hour)

Presenters: Dr PANIZZO, Giancarlo; Prof. COBAL, Marina

Contribution ID: 28

Type: **not specified**

Top Quark, exercises

Friday, 12 July 2019 16:00 (1 hour)

Presenters: Dr PANIZZO, Giancarlo; Prof. COBAL, Marina

Contribution ID: 29

Type: **not specified**

Leptons II

Tuesday, 16 July 2019 09:30 (2 hours)

Presenter: CAUZ, Diego (UD)

Contribution ID: **30**

Type: **not specified**

Gauge Bosons I

Tuesday, 16 July 2019 11:30 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: **31**

Type: **not specified**

Detectors I

Tuesday, 16 July 2019 16:00 (2 hours)

Presenter: PALESTRI, pierpaolo (DPIA, Univ. of Udine)

Contribution ID: **32**

Type: **not specified**

Detectors II

Wednesday, 17 July 2019 09:30 (2 hours)

Presenter: VACCHI, Andrea (TS)

Contribution ID: 33

Type: **not specified**

Gauge Bosons II

Wednesday, 17 July 2019 11:30 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: **34**

Type: **not specified**

Higgs theory

Thursday, 18 July 2019 09:30 (1 hour)

Summary

Presenter: PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 35

Type: **not specified**

Higgs –experimental results

Thursday, 18 July 2019 10:30 (2 hours)

Presenter: PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: **36**

Type: **not specified**

CERN

Thursday, 18 July 2019 16:00 (1 hour)

Presenter: Prof. COBAL, Marina

Contribution ID: 37

Type: **not specified**

Accelerators II

Presenter: PANIZZO, Giancarlo

Contribution ID: **38**

Type: **not specified**

Particle Physics Test

Presenters: PANIZZO, Giancarlo (TS); COBAL, Marina (UD)

Contribution ID: 39

Type: **not specified**

Detectors III

Wednesday, 17 July 2019 16:00 (1 hour)

Summary

Presenter: Prof. COBAL, Marina

Contribution ID: 40

Type: **not specified**

Masterclass II

Friday, 19 July 2019 10:30 (2 hours)

Summary

Presenters: Dr PANIZZO, Giancarlo; Prof. COBAL, Marina; PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 41

Type: **not specified**

Exercises/discussion

Friday, 19 July 2019 16:00 (1 hour)

Presenters: Dr PANIZZO, Giancarlo; Prof. COBAL, Marina; PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 42

Type: **not specified**

Masterclass I

Presenters: Dr PANIZZO, Giancarlo; Prof. COBAL, Marina; PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 43

Type: **not specified**

Accelerators I

Monday, 22 July 2019 09:30 (2 hours)

Presenter: Prof. COBAL, Marina

Contribution ID: 44

Type: **not specified**

BSM I

Monday, 22 July 2019 11:30 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 45

Type: **not specified**

Movie: Almost Nothing

Monday, 22 July 2019 16:00 (2 hours)

Contribution ID: 46

Type: **not specified**

LHC

Tuesday, 23 July 2019 09:30 (1 hour)

Presenter: PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 47

Type: **not specified**

ATLAS and CMS

Tuesday, 23 July 2019 10:30 (2 hours)

Presenter: Prof. COBAL, Marina

Contribution ID: 48

Type: **not specified**

Cosmic Rays lab

Tuesday, 23 July 2019 15:30 (3 hours)

Summary

Presenters: VALLAZZA, Erik Silvio (TS); Prof. SANTI, Lorenzo; BOMBEN, Luca (Università degli Studi dell'Insubria)

Contribution ID: 49

Type: **not specified**

Computational lab on Higgs

Wednesday, 24 July 2019 09:30 (3 hours)

Summary

Presenters: Dr PANIZZO, Giancarlo; PINAMONTI, Michele (Istituto Nazionale di Fisica Nucleare)

Contribution ID: 50

Type: **not specified**

BSM II

Wednesday, 24 July 2019 16:00 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 51

Type: **not specified**

Accelerators II

Presenter: Prof. COBAL, Marina

Contribution ID: 52

Type: **not specified**

Accelerators II

Thursday, 25 July 2019 09:30 (1 hour)

Summary

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 53

Type: **not specified**

Particle Physics test

Thursday, 25 July 2019 11:30 (1 hour)

Presenter: Dr PANIZZO, Giancarlo

Contribution ID: 54

Type: **not specified**

Gravitational waves

Thursday, 25 July 2019 10:30 (1 hour)

Presenter: Prof. COBAL, Marina

Contribution ID: 55

Type: **not specified**

Visit to the Synchrotron

Friday, 26 July 2019 09:30 (3 hours)

Contribution ID: 56

Type: **not specified**

Visit of a place of interest

Friday, 26 July 2019 14:30 (5 hours)

Contribution ID: 57

Type: **not specified**

Lunch in Trieste

Friday, 26 July 2019 12:30 (2 hours)