Pillar Courses

Course	Area	Course Organizer	email
Modeling Complex Systems	MERC	Mario di Bernardo	mario.dibernardo@unina.it
Stochastic Modelling	MERC	Massimiliano Giorgio	massimiliano.giorgio@unina.it
General Relativity	SPACE	Salvatore Capozziello	salvatore.capozziello@unina.it
Differential Geometry	MPS	Alessandro Zampini	alessandro.zampini@unina.it
PDEs	MPS	Carlo Nitsch	c.nitsch@unina.it
Numerical Treatment of PDEs	MPS	Francesco Calabrò	calabro@unina.it
Electromagnetism	SPACE	Daniele Riccio	daniele.riccio@unina.it
Numerical methods for complex systems	MERC	Constantinos Siettos	constantinos.siettos@unina.it
Quantum mechanics	SPACE	Rino Miele	gennaro.miele@unina.it

Timetable (First six weeks, from 09/11/2020 to 17/12/2020)

	Monday	Tuesday	Wednesday	Thursday
9:00 am 11:00 am	General Relativity	Stochastic Modelling	General Relativity	Stochastic Modelling
11:00 am 1:00 pm	Modeling Complex Systems	Differential Geometry	Modeling Complex Systems	Differential Geometry
2:00 pm 3:30 pm	-	-	-	Seminar

Courses Teams' Codes (to access the Microsoft Teams platform)

General Relativity: gipjxm0
Stochastic Modelling: p5odr2y
Modeling Complex Systems: pe4gy30

Differential Geometry: 6jlush8
Seminars: 10gkgko



Courses Timetable (From 11/01/2021 to 19/02/2021)

Course	Area	Prof.	email	Teams' Code
PDEs	MPS	Carlo Nitsch	c.nitsch@unina.it	zfkpw7x
Numerical Treatment of PDEs	MPS	Francesco Calabrò	calabro@unina.it	a2di18o
Electro- magnetism **	SPACE	Daniele Riccio	daniele.riccio@unina.it	clglhco
Numerical methods for complex systems	MERC	Constantinos Siettos	constantinos.siettos@unina.it	gf8brfv

** the course will start from 18/01

	Monday	Tuesday	Wednesday	Thursday
9:00 am 11:00 am	Numerical Treatment of PDEs	PDEs	Numerical Treatment of PDEs	PDEs
11:00 am 1:00 pm	Electro- magnetism **	Numerical methods for complex systems	Electro- magnetism **	Numerical methods for complex systems
2:00 pm 3:30 pm	-	-	-	Scientific Colloquia (Teams code: 2hvyhfx)









Next Scientific Colloquia at SSM

☐ 14/01/2021 - 2pm : **Juergen Kurths**, Department of Complexity Science, Postdam Institute for Climate Impact Research – Germany 21/01/2021 - 2pm : Jailson Alcaniz, National Observatory of Rio de Janeiro - Brasil □ 28/01/2021 - 2pm : Rosario Fazio, Centre for Theoretical Physics (ICTP), and Department of Physics, Scuola Normale Superiore - Italy □ 04/02/2021 - 2pm : Maurizio Porfiri, Department of Mechanical and Aerospace Engineering, New York University - U.S.A. ☐ 11/02/2021 - 2pm : Massimo Della Valle, Astronomical Observatory of Capodimonte - Italy □ 18/02/2021 - 2pm : Francesco Solombrino, "Renato Caccioppoli" Department of Mathematics and Applications, University of Naples Federico II – Italy □ 25/02/2021 - 2pm : Andrey Golutvin, Department of Physics, Imperial College London - U.K. □ 04/03/2021 - 2pm : **Gennaro Miele**, "Ettore Pancini" Department of Physics, University of Naples Federico II - Italy □ 25/03/2021 - 2pm : **Giuseppe Longo**, "Ettore Pancini" Department of Physics, University of Naples Federico II - Italy 29/04/2021 - 2pm : Thomas H. Jordan, Earth Sciences, University of Southern California - U.S.A









Courses from 8th March to 23rd April, 2021

MERC area

• Performance-Based Risk Analysis

Teacher: Prof. Iunio Iervolino

Teaching mode: in-person | Dates: 08/03 - 09/04 | Hours: 24

Team code: rn9o873

• Introduction to Turbulent and Reacting Flows

Teacher: Prof. Almerinda Di Benedetto, Prof. Gennaro Coppola Teaching mode: online | Dates: 12/04 – 23/04 | Hours: 12

Team code: gzu3j3q

MPS area

Physics of Matter from the Zepto-Scale to the Macro-Scale

Teacher: Prof. Lorenzo Marrucci, Prof. Fabio Ambrosino, Prof. Rosario Fazio

Teaching mode: online | Dates: 08/03 - 23/04 | Hours: 24

Team code: om9p5si

Soft Matter in Flow: Modelling and Simulation

Teacher: Prof. Pier Luca Maffettone, Prof. Gaetano D'Avino Teaching mode: online | Dates: 08/03 – 23/04 | Hours: 24

Team code: iyg1l0c

SPACE area

• Introduction to Cosmology

Teacher: Prof. Matarrese

Teaching mode: online | Dates: 08/03 - 23/04 | Hours: 24

Team code: 0igun02

Quantum Mechanics

Teacher: Prof. Gennaro Miele

Teaching mode: online | Dates: 08/03 - 23/04 | Hours: 24

Team code: xlwiq1b

Spacecraft Attitude Control via Momentum Exchange Devices

Teacher: Prof. Riccardo Bevilacqua

Teaching mode: in-person | Dates: 22/03 – 31/03 | Hours: 24

Team code: elxnxcb



08/03 - 19/03

	Monday	Tuesday	Wednesday	Thursday	Friday
:30AM - :30AM - :30AM -	Introduction of Cosmology Matarrese (online) 9:00AM-11:00AM	Performance-based risk analysis Iervolino (in-person) 9:00AM-11:00AM	Performance-based risk analysis Iervolino (in-person) 9:00AM-11:00AM	Performance-based risk analysis Iervolino (in-person) 9:00AM-11:00AM	
:00AM - :30AM - :00PM - :30PM -	Quantum Mechanics Miele (online) 11:00AM-1:00PM	Introduction of Cosmology Matarrese (online) 11:00AM-1:00PM	Quantum Mechanics Miele (online) 11:00AM-1:00PM		
:00PM = :30PM = :00PM =					
:30PM - :00PM -	Physics of matter from the zepto-scale to the macro-scale Marrucci/Fazio/Ambrosino (online) 2:00PM-4:00PM		Physics of matter from the zepto-scale to the macro-scale Marrucci/Fazio/Ambrosino (online) 2:00PM-4:00PM	SSM COLLOQUIA (online) 2:00PM-4:00PM	
:00PM = :30PM = :00PM =	Soft Matter in Flow: Modelling and Simulation Maffettone (online) 4:00PM-6:00PM	Soft Matter in Flow: Modelling and Simulation Maffettone (online) 4:00PM-6:00PM			
30PM -					



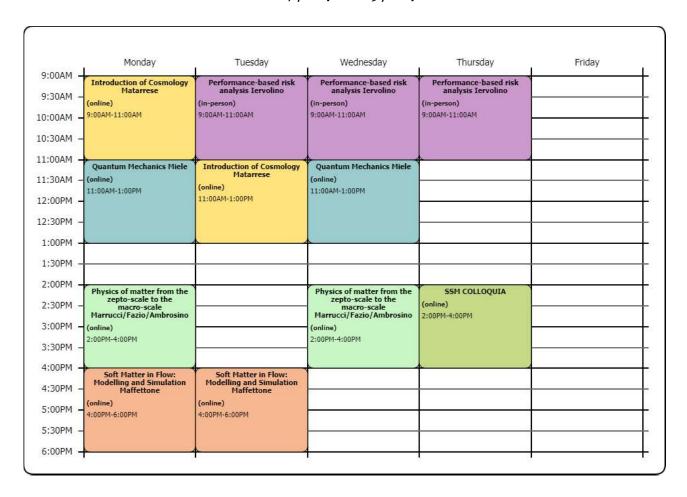
22/03 – 31/03 (Wednesday)

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00AM - 0:00AM -	Introduction of Cosmology Matarrese (online) 9:00AM-11:00AM	PERFORMANCE-based risk analysis Iervolino (in presenza) 9:00AM-11:00AM	PERFORMANCE-based risk analysis Iervolino (in presenza) 9:00AM-11:00AM	PERFORMANCE-based risk analysis Iervolino (in presenza) 9:00AM-11:00AM	Spacecraft attitute control via momentum exchange devices (in presence) 9:00AM-12:00PM
J.OUAM -					
1:00AM -	Quantum Mechanics Miele (online) 11:00AM-1:00PM	Introduction of Cosmology Matarrese (online) 11:00AM-1:00PM	Quantum Mechanics Miele (online) 11:00AM-1:00PM	Spacecraft attitute control via momentum exchange devices Bevilacqua (in presence) 11:00AM-1:00PM	
2:00PM -					
1:00PM -					
2:00PM -	Physics of matter from the zepto-scale to the macro-scale Marrucci/Fazio/Ambrosino (online)	Spacecraft attitute control via momentum exchange devices (in presence) 2:00PM-4:00PM	Physics of matter from the zepto-scale to the macro-scale Marrucci/Fazio/Ambrosino (online)	SSM COLLOQUIA (online) 2:00PM-4:00PM	Spacecraft attitute control via momentum exchange devices (in presence) 2:00PM-4:00PM
3:00PM -	2:00PM-4:00PM		2:00PM-4:00PM		
1:00PM -	Soft Matter in Flow: Modelling and Simulation Maffettone (online)	Soft Matter in Flow: Modelling and Simulation Maffettone (online)	Spacecraft attitute control via momentum exchange devices (In presence)	Spacecraft attitute control via momentum exchange devices (In presence)	
5:00PM -	4:00PM-6:00PM	4:00PM-6:00PM	4:00PM-7:00PM	4:00PM-7:00PM	
5:00PM -	Spacecraft attitute control via momentum exchange devices (in presence)	Spacecraft attitute control via momentum exchange devices (in presence)			
7:00PM -	6:00PM-7:00PM	6:00PM-7:00PM			



Easter break | 01/04 - 6/04

07/04 - 09/04





12/04 - 23/04

	Monday	Tuesday	Wednesday	Thursday	Friday
	Introduction of Cosmology Matarrese (online) 9:00AM-11:00AM	Introduction to Turbulent and Reacting flows di Benedetto/Coppola (online) 9:00AM-11:00AM	Introduction to Turbulent and Reacting flows di Benedetto/Coppola (online) 9:00AM-11:00AM	Introduction to Turbulent and Reacting flows di Benedetto/Coppola (online) 9:00AM-11:00AM	
	Quantum Mechanics Miele (online) 11:00AM-1:00PM	Introduction of Cosmology Matarrese (online) 11:00AM-1:00PM	Quantum Mechanics Miele (online) 11:00AM-1:00PM		
:00PM -					
30PM -	Physics of matter from the zepto-scale to the macro-scale Marrucci/Fazio/Ambrosino (online) 2:00PM-4:00PM		Physics of matter from the zepto-scale to the macro-scale Marrucci/Fazio/Ambrosino (online) 2:00PM-4:00PM	SSM COLLOQUIA (online) 2:00PM-4:00PM	
OODM _	Soft Matter in Flow: Modelling and Simulation Maffettone (online) 4:00PM-6:00PM	Soft Matter in Flow: Modelling and Simulation Maffettone (online) 4:00PM-6:00PM			



MERC Area: Courses from 26th April to 18th June, 2021

• Stochastic Differential Equations and Singular Stochastic Control

Lecturer: Prof. Tiziano De Angelis, Prof. Maria Chiarolla

Teaching mode: online | Hours: 24

Team code: pxmnigv

• Fundamentals of Natural Hazard Forecasting

Lecturer: Prof. Warner Marzocchi Teaching mode: online | Hours: 14

Team code: 4bvahv0

• Risk Analysis, Assessment and Management: Why, What and How

Lecturer: Prof. Hans Pasman
Teaching mode: online | Hours: 6

Team code: mbi149v

• Short-Term Forecasting of Earthquakes, Eruptions, and Heavy Hydrogeological Events

Teaching mode: online | Hours: 14

Team code: 9yzl21x

o Part I: Short-Term Earthquake and Eruption Forecasting

Lecturer: Prof. Warner Marzocchi

Hours: 6

o Part II: Short-Term Forecasting of Heavy Hydrological Events

Lecturer: Prof. Gianfranco Urciuoli

Hours: 8

• An Introduction to (Multi-Agent) Reinforcement Learning for Complex Systems Analysis and Data Driven Control

Teaching mode: online | Hours: 12

Team code: albwrdr

o Part I: An Introduction to (Multi-Agent) Reinforcement Learning for Complex

Systems Analysis

Lecturer: Prof. Mirco Musolesi

Hours: 6

Part II: An Introduction to Data Driven Control

Lecturer: Prof. Giovanni Russo

Hours: 6

• Complex Dynamics of Human Behaviour: Theory, Modelling and Analysis

Lecturer: Prof. Michael Richardson Teaching mode: online | Hours: 6

Team code: m48jwz7



• Earthquake Early Warning Systems: Concept, Methods and Technologies

Lecturer: Prof. Aldo Zollo

Teaching mode: online | Hours: 12

Team code: rwz542q

26 April 2021 - 30 April 2021

	Monday	Tuesday	Wednesday	Thursday
09:00		Fundamentals of Natural	Fundamentals of Natural	Fundamentals of Na
09:30		Hazard Forecasting (Marzocchi)	Hazard Forecasting (Marzocchi)	Hazard Forecastir (Marzocchi)
10:00		, ,	, ,	, ,
10:30				
11:00	Stochastic Differential	Stochastic Differential	Stochastic Differential	
11:30	Equations and Singular Stochastic Control (De	Equations and Singular Stochastic Control (De	Equations and Singular Stochastic Control (De	
12:00	Angelis)	Angelis)	Angelis)	
12:30				
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14:00				SSM Scientific Colloq
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16:00				
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17:00				
17:30				

03 May 2021 - 07 May 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	Fundamentals of Natural	Fundamentals of Natural	Fundamentals of Natural	Fundamentals of Na
09:30	Hazard Forecasting (Marzocchi)	Hazard Forecasting (Marzocchi)	Hazard Forecasting (Marzocchi)	Hazard Forecastir (Marzocchi)
10:00				
10:30				
11:00	Stochastic Differential	Stochastic Differential	Stochastic Differential	
11:30	Equations and Singular Stochastic Control (De	Equations and Singular Stochastic Control (De	Equations and Singular Stochastic Control (De	
12:00	Angelis)	Angelis)	Angelis)	
12:30				
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14:00				SSM Scientific Colloq
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16:30				
17:00				
17:30				

10 May 2021 - 14 May 2021

	Monday	Tuesday	Wednesday	Thursday
09:00		Risk Analysis, Assessment	Risk Analysis, Assessment	Risk Analysis, Assessi
09:30		and Management: Why, What and How (Pasman)	and Management: Why, What and How (Pasman)	and Management: V What and How (Pasr
10:00		What and now (i asman)	what and now (r asman)	what and now (r asi
10:30				
11:00	Stochastic Differential	Stochastic Differential		
11:30	Equations and Singular Stochastic Control (De	Equations and Singular Stochastic Control		
12:00	Angelis)	(Chiarolla)		
12:30				
13:00				
13:30				
14:00				SSM Scientific Colloq
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16:00				
16:30				
17:00				
17:30				

17 May 2021 - 21 May 2021

	Monday	Tuesday	Wednesday	Thursday
09:00		Short-Term Forecasting of	Short-Term Forecasting of	Short-Term Forecasti
09:30		Earthquakes, Eruptions, and Heavy Hydrogeological	Earthquakes, Eruptions, and Heavy Hydrogeological	Earthquakes, Eruption Heavy Hydrogeolog
10:00		Events - Part I (Marzocchi)	Events - Part I (Marzocchi)	Events - Part I (Marzo
10:30				
11:00	Stochastic Differential	Stochastic Differential		
11:30	Equations and Singular Stochastic Control	Equations and Singular Stochastic Control		
12:00	(Chiarolla)	(Chiarolla)		
12:30				
13:00				
13:30				
14:00				SSM Scientific Colloq
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17:00				
17:30				

24 May 2021 - 28 May 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	J		An Introduction to (Multi-	An Introduction to (N
09:30	Earthquakes, Eruptions, and		Agent) Reinforcement	Agent) Reinforcem
	Heavy Hydrogeological		Learning for Complex	Learning for Comp
10:00	Events - Part II (Urciuoli)		Systems Analysis and Data Driven Control - Part I	Systems Analysis and Driven Control - Pa
10:30			(Musolesi)	(Musolesi)
			,	(IVIUSOIESI)
11:00	Stochastic Differential	Stochastic Differential	Short-Term Forecasting of	
11:30	Equations and Singular	Equations and Singular	Earthquakes, Eruptions, and	
	Stochastic Control	Stochastic Control	Heavy Hydrogeological	
12:00	(Chiarolla)	(Chiarolla)	Events - Part II (Urciuoli)	
12:30				
12.00				
13:00				
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14:00				SSM Scientific Collog
14:30				
15:00		Short-Term Forecasting of		
15:30		Earthquakes, Eruptions, and		
15:30		Heavy Hydrogeological		
16:00		Events - Part II (Urciuoli)		
16:30				
17:00				
17:30				

31 May 2021 - 4 June 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	Complex Dynamics of Human Behaviour: Theory,	An Introduction to (Multi- Agent) Reinforcement		Complex Dynamics Human Behaviour: Th
09:30	Modelling and Analysis (Richardson)	Learning for Complex Systems Analysis and Data		Modelling and Anal (Richardson)
10:00	(Nichal usuh)	Driven Control - Part I		(Nicharuson)
10:30		(Musolesi)		
11:00		Short-Term Forecasting of		
11:30		Earthquakes, Eruptions, and Heavy Hydrogeological		
12:00		Events - Part II (Urciuoli)		
12:30				
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14:00				SSM Scientific Colloq
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17:30				

7 June 2021 - 11 June 2021

	Monday	Tuesday	Wednesday	Thursday
09:00			Earthquake Early Warning	Earthquake Early Warı
09:30			Systems: Concept, Methods and Technologies (Zollo)	Systems: Concept, Met and Technologies (Zo
10:00			and recimologies (2010)	and recimologies (20
10:30				
10:30				
11:00			An Introduction to (Multi-	
11:30			Agent) Reinforcement Learning for Complex	
12:00			Systems Analysis and Data	
12:30			Driven Control - Part II	
			(Russo)	
13:00				
13:30				
14:00				SSM Scientific Colloqu
14:30				
15:00				
15:30				
16:00				
16:30	•			
17:00	Agent) Reinforcement			\times
17:30	Learning for Complex Systems Analysis and Data			
17.30	Driven Control - Part II			
	(Russo)			

14 June 2021 - 18 June 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	, ,	Earthquake Early Warning	Earthquake Early Warning	Earthquake Early Wa
09:30	Systems: Concept, Methods and Technologies (Zollo)	Systems: Concept, Methods and Technologies (Zollo)	Systems: Concept, Methods and Technologies (Zollo)	Systems: Concept, Me and Technologies (Z
10:00				
10:30				
11:00				
11:30				
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MPS Area: Courses from 26^{th} April to 18^{th} June, 2021

• Advanced topics in particle physics

Lecturer: Prof. Fabio Ambrosino Teaching mode: online | Hours: 6

Team code: srxoszl

Advanced topics in physics of matter

Lecturer: Prof. Rosario Fazio

Teaching mode: online | Hours: 6

Team code: 11210x4

• Computational Electromagnetics

Lecturer: Prof. Raffaele Albanese / Prof. Fabio Villone

Teaching mode: online | Hours: 24

Team code: s5shmkt

• Thermodynamics of Materials

Lecturer: Prof. Giuseppe Mensitieri Teaching mode: online | Hours: 20

Team code: 4sgzt0n

26 April 2021 - 30 April 2021

	Monday	Tuesday	Wednesday	Thursday
09:00		Advanced Topics in Particle	Computational	
09:30	Electromagnetics (Albanese/Villone)	Physics (Ambrosino)	Electromagnetics (Albanese/Villone)	
10:00				
10:30				
11:00		Thermodynamics of	Thermodynamics of	
11:30		Materials (Mensitieri)	Materials (Mensitieri)	
12:00				
12:30				
13:00				
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14:00				SSM Scientific Colloq
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17:00				
17:30				

3 May 2021 - 7 May 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	•	1	Computational	
09:30	Electromagnetics (Albanese/Villone)	!	Electromagnetics (Albanese/Villone)	
10:00		<u> </u>		
10:30		!		
11:00	•	Thermodynamics of		
11:30	Materials (Mensitieri)	Materials (Mensitieri)	!	
12:00			!	
12:30				
13:00				
13:30				
14:00			Advanced Topics in Particle	SSM Scientific Colloq
14:30	1	!	Physics (Ambrosino)	
15:00		!		
15:30				
16:00				
16:30		!	!	
17:00		!	!	
17:30				

10 May 2021 - 14 May 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	Computational	Advanced Topics in Particle	Computational	
09:30	Electromagnetics (Albanese/Villone)	Physics (Ambrosino)	Electromagnetics (Albanese/Villone)	
10:00				
10:30				
11:00	Thermodynamics of	Thermodynamics of		
11:30	Materials (Mensitieri)	Materials (Mensitieri)		
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17:30				

17 May 2021 - 28 May 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	•		Computational	
09:30	Electromagnetics (Albanese/Villone)		Electromagnetics (Albanese/Villone)	
10:00		'		
10:30				
11:00	•	Thermodynamics of	Advanced Topics in Physics	
11:30	Materials (Mensitieri)	Materials (Mensitieri)	of Matter (Fazio)	
12:00				
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14:00				SSM Scientific Colloq
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17:30				

31 May 2021 - 4 June 2021

	Monday	Tuesday	Wednesday	Thursday
09:00	Computational			
09:30	Electromagnetics (Albanese/Villone)			
10:00				
10:30				
11:00	Thermodynamics of	Thermodynamics of		
11:30	Materials (Mensitieri)	Materials (Mensitieri)		
12:00				
12:30				
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14:00				SSM Scientific Colloq
14:30				
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17:30				

7 June 2021 - 11 June 2021

	Monday	Tuesday	Wednesday	Thursday
09:00			Computational	
09:30	!	!	Electromagnetics (Albanese/Villone)	
10:00	!	!	·	
10:30		!		
11:00		1	Advanced Topics in Physics	
11:30	!	!	of Matter (Fazio)	
12:00				
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14:00				SSM Scientific Colloq
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17:00	!		!	
17:30				



SPACE Area: Courses from 26th April to 18th June, 2021

Note that each course has a different start and end date.

• Cosmic Distances

Lecturer: Prof. Della Valle

Email: massimo.dellavalle@inaf.it

Teaching mode: online | Dates start-end: 03/05 - 11/06 | Hours: 12

Wednesday 14h-16h Team code: **to995yo**

• Quasar Cosmology

Lecturer: Prof. Risaliti

Email: guido.risaliti@unifi.it

Teaching mode: online | Dates start-end: 26/04 - 14/05 | Hours: 12

Monday 11h-13h, Thursday 9h-11h

Team code: 7g8qb3h

• Standard Model of Fundamental Interactions

Lecturer: Prof. Sannino Email: sannino@cp3.sdu.dk

Teaching mode: online | Dates start-end: 26/04 – 14/05 | Hours: 12

Monday 9h-11h, Wednesday 11h-13h

Team code: c3x669m

Observational Cosmology

Lecturer: Dr. Benetti

Email: micol.benetti@unina.it

Teaching mode: online | Dates start-end: 26/04 – 14/05 | Hours: 12

Tuesday - Thursday 11h-13h

Team code: 8ezkbz0

Scuola Superiore Meridionale

