

# Introduction to Study Groups

International Teacher Weeks Programme 2023



# How and when?

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09:00 → 12:30	Lectures	13/2-005
09:00	<b>Introduction to Particle Accelerators 1/3</b> Speaker: Dr Simone Gilardoni (CERN)	1h
10:00	Coffee break	15m
10:15	<b>Introduction to Particle Accelerators 2/3</b> Speaker: Dr Simone Gilardoni (CERN)	1h
11:15	Coffee break	15m
11:30	<b>Introduction to Particle Accelerators 3/3</b> Speaker: Dr Simone Gilardoni (CERN)	1h
12:30 → 13:45	Lunch break	1h 15m
13:45 → 17:00	Lectures	6/2-024 - BE Auditorium Meyr...
The whole group meets in front of the CERN hotel ( <a href="#">Building 39</a> ) at 13:45!		
14:00	<b>Introduction to Study Groups</b> Speaker: Jeff Wiener (CERN)	45m
14:45	Coffee break	15m
15:00	<b>The Discovery of the Higgs Boson</b> Speaker: Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK))	1h 30m
16:30	<b>First Questions &amp; First Answers</b> Speaker: Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK))	30m
18:00 → 22:00	Social Events	
18:00	<b>Bowling &amp; Pizza</b> Meet at the tram stop outside of CERN at 18:00! <a href="http://thebowlingbalxert.ch">thebowlingbalxert.ch</a>	4h

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Time	Activity	Speaker	Duration
09:00	Lectures		
09:00	Introduction to Particle Accelerators 1/3	Dr Simone Gilardoni (CERN)	1h
10:00	Coffee break		15m
10:15	Introduction to Particle Accelerators 2/3	Dr Simone Gilardoni (CERN)	1h
11:15	Coffee break		15m
11:30	Introduction to Particle Accelerators 3/3	Dr Simone Gilardoni (CERN)	1h
12:30	Lunch break		1h 15m
13:45	Lectures		
14:00	Introduction to Study Groups	Jeff Wiener (CERN)	45m
14:45	Coffee break		15m
15:00	The Discovery of the Higgs Boson	Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK))	1h 30m
16:30	First Questions & First Answers	Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK))	30m
18:00	Social Events		
18:00	Bowling & Pizza	Meet at the tram stop outside of CERN at 18:00! <a href="http://thebowlingbalxert.ch">thebowlingbalxert.ch</a>	4h

# How and when?

The screenshot shows a detailed event schedule for a CERN event. The schedule is organized into time slots. The first slot, from 09:00 to 12:30, is titled 'Lectures' and includes three presentations by Dr. Simone Gilardoni (CERN) on 'Introduction to Particle Accelerators' (1/3, 2/3, and 3/3), each followed by a 15-minute coffee break. The second slot, from 12:30 to 13:45, is a 'Lunch break'. The third slot, from 13:45 to 17:00, is also titled 'Lectures' and includes a note about the location change to the CERN hotel at 13:45. This slot features three presentations: 'Introduction to Study Groups' by Jeff Wiener (CERN) at 14:00, 'The Discovery of the Higgs Boson' by Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK)) at 15:00, and 'First Questions & First Answers' by Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK)) at 16:30. The final slot, from 18:00 to 22:00, is titled 'Social Events' and includes 'Bowling & Pizza' at 18:00. Two orange hand-drawn circles highlight the 'Introduction to Study Groups' presentation and the 'Bowling & Pizza' social event.

Time	Event	Speaker	Duration
09:00	Introduction to Particle Accelerators 1/3	Dr. Simone Gilardoni (CERN)	1h
10:00	Coffee break		15m
10:15	Introduction to Particle Accelerators 2/3	Dr. Simone Gilardoni (CERN)	1h
11:15	Coffee break		15m
11:30	Introduction to Particle Accelerators 3/3	Dr. Simone Gilardoni (CERN)	1h
12:30	Lunch break		1h 15m
13:45	Introduction to Study Groups	Jeff Wiener (CERN)	45m
14:45	Coffee break		15m
15:00	The Discovery of the Higgs Boson	Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK))	1h 30m
16:30	First Questions & First Answers	Luis Roberto Flores Castillo (The Chinese University of Hong Kong (HK))	30m
18:00	Bowling & Pizza		4h

# Which topics?

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- 1 Particle Accelerators
- 2 Particle Detectors
- 3 Engineering at CERN
- 4 Medical Applications of Particle Physics
- 5 Computing & Data Analysis
- 6 Antimatter Research
- 7 Future Accelerators

# Aims and goals?





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Be creative



# Aims and goals?

Be creative  
Collaborate



# Aims and goals?

Be creative  
Collaborate  
Share your experiences



# Aims and goals?

Be creative  
Collaborate  
Share your experiences  
Learn from your colleagues



# Aims and goals?

Be creative  
Collaborate  
Share your experiences  
Learn from your colleagues  
Create and develop *something*

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Independently & self-organised!

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Be creative  
Collaborate  
Share your experiences  
Learn from your colleagues  
Create and develop **something**

Present the results and outcomes of  
your study group through a detailed  
and **entertaining** presentation

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Independently & self-organised!

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Be creative  
Collaborate  
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Independently & self-organised!

5x2mins + 5mins



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Share your experiences  
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Create and develop **something**

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Share the results with your  
students and your colleagues

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Be creative  
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Share your experiences  
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Independently & self-organised!

5x2mins + 5mins

Send us feedback!

# Process

## **Guiding research questions about the SG topics**

- A) To what extent is the topic featured in your curriculum?
- B) Which students' conceptions about the topic do you know?
- C) What is your experience with teaching the topic in your classroom?
- D) Which words and phrases can cause difficulties and misunderstandings?
- E) Which aspects of the topic do you consider challenging to teach to students?
- F) Which aspects of the topic do you think can be appropriately introduced in the classroom?

# How and when?

## WEEK 1

### **SG Session 1**

Wednesday, 9 August  
16:00-17:30

### **SG Session 2**

Thursday, 10 August  
14:00-15:30 or 15:30-17:00

## WEEK 2

### **SG Session 3**

Monday, 14 August  
16:00-17:30

### **SG Session 4**

Thursday, 17 August  
14:00-17:00

## Last day of ITW2023

### **SG Presentations**

Friday, 18 August  
9:30-12:30

# Deadline

THURSDAY, 17 AUGUST

09:00 → 13:00	<b>Lectures</b>	📍 13/2-005
09:00	<b>AWAKE</b> Speaker: Marlene Turner (CERN)	🕒 1h
10:00	Coffee break	🕒 15m
10:15	<b>Future Particle Accelerators</b> Speaker: Michael Benedikt (CERN)	🕒 1h 30m
11:45	Coffee break	🕒 15m
12:00	<b>Final Questions &amp; Final Answers</b> Speaker: Emmanuel Tsesmelis (CERN)	🕒 1h
13:00 → 14:00	Lunch break	🕒 1h
14:00 → 17:00	<b>Study Groups</b>	
14:00	<b>SG Session 4</b>	🕒 3h
17:00 → 17:30	ITW2023 GROUP PICTURE!!!!!!!!!!!!!!!!!!!!	🕒 30m

# Deadline

THURSDAY, 17 AUGUST

09:00 → 13:00 Lectures 13/2-005

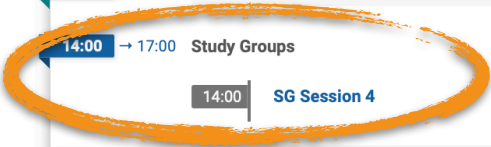
- 09:00 **AWAKE** 1h  
Speaker: Marlene Turner (CERN)
- 10:00 **Coffee break** 15m
- 10:15 **Future Particle Accelerators** 1h 30m  
Speaker: Michael Benedikt (CERN)
- 11:45 **Coffee break** 15m
- 12:00 **Final Questions & Final Answers** 1h  
Speaker: Emmanuel Tsesmelis (CERN)

13:00 → 14:00 **Lunch break** 1h

14:00 → 17:00 **Study Groups**

- 14:00 **SG Session 4** 3h

17:00 → 17:30 **ITW2023 GROUP PICTURE!!!!!!!!!!!!!!!!!!!!** 30m



# Presentations

09:30	→ 12:30	<b>Study Groups – Final Reports</b>	40/S2-D01 - Salle Dirac	Join
09:30		<b>Introduction &amp; Overview</b> Speaker: Jeff Wiener (CERN)		15m
09:45		<b>SG1 Report</b>		15m
10:00		<b>SG2 Report</b>		15m
10:15		<b>SG3 Report</b>		15m
10:30		<b>Coffee break</b>		30m
11:00		<b>SG4 Report</b>		15m
11:15		<b>SG5 Report</b>		15m
11:30		<b>SG6 Report</b>		15m
11:45		<b>SG7 Report</b>		15m
12:30	→ 14:30	<b>Lunch break</b>		2h
14:30	→ 17:15	<b>Closing Session</b>	500/1-001 - Main Auditorium	
14:30		<b>Concept Map Session 3</b> Speaker: Milena Vujanovic (University of Leeds)		45m
15:15		<b>What's next?</b> Speakers: Jeff Wiener (CERN), Charlotte Lindberg Warakaulle (CERN)		45m
16:00		<b>Certificates &amp; Goodie Bags</b> Speakers: Jeff Wiener (CERN), Milena Vujanovic (University of Leeds)		1h 15m
19:00	→ 21:00	<b>Social Events</b>	VIP Glassbox	
19:00		<b>Farewell Dinner</b>		2h

# Output

## **Guidelines for the study group presentations**

### **1) Curriculum & classroom connections**

*Highlight potential connections to the various curriculums and your individual teaching practises*

### **2) Key ideas**

*Showcase the most important aspects of the topic that you consider to be key for a meaningful instruction*

### **3) Potential students' conceptions & challenges**

*Illustrate elements of the topic that might obstruct a successful introduction in the classroom*

### **4) Helpful material and resources**

*Reference any material that you find useful for your students and/or your colleagues*

### **5) Best practice example**

*Summarise your findings through a brief outline of an instructional strategy*



# Output



**ITW2023**  
Study Groups

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**FINAL  
REPORTS**

## Study group title

Author One<sup>1</sup>, Author Two<sup>2</sup>, Author Three<sup>3</sup>, Author Four<sup>4</sup>, Author Five<sup>5</sup>  
<sup>1</sup> Name of School, City, Country | author.one@email.com  
<sup>2</sup> Name of School, City, Country | author.two@email.com  
<sup>3</sup> Name of School, City, Country | author.three@email.com  
<sup>4</sup> Name of School, City, Country | author.four@email.com  
<sup>5</sup> Name of School, City, Country | author.five@email.com

### 1) Key ideas

Showcase the most important aspects of the topic that you consider key for meaningful classroom instruction

### 2) Best practice example

Summarise your findings through a brief outline of an instructional strategy, Explain how to best introduce the topic in your classroom

### 3) Helpful material and resources

Reference any material that you find useful for your students and/or your colleagues



# Questions?

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