

# Program

## Sunday, 10 February 2019

16:00 – 21:00	Registration	
from 18:30	<i>BUFFET SUPPER / Informal get together</i>	
19:45 – 20:00	Scientific organizers	<b>Opening and welcome</b>
20:00 – 21:00	Martin Hendry	<b>Einstein's masterpiece: 100 years of general relativity</b>

## Monday, 11 February 2019

08:00	<i>BREAKFAST</i>	
09:00 – 10:00	Bernard Schutz	<b>Intuition in physics: What is a physicist anyway?</b>
10:00 – 11:00	Karl-Heinz Lotze	<b>Various approaches to teach light deflection in gravitational fields</b>
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Silvia Simionato	<b>Combining general relativity and optics to visualize light on curved paths</b>
12:30	<b>Conference Photo</b> (in the foyer of the lecture hall)	
12:45	<i>LUNCH</i>	
14:15 – 15:15	Friedrich Herrmann	<b>GTR and Cosmology in the Karlsruhe Physics Course: A short description of a 15-hour course for the upper secondary school</b>
15:15 – 15:45	<i>COFFEE BREAK</i>	
15:45 – 17:45	Daina Taimina	<b>Tactile hyperbolic geometry</b> (workshop)
17:45 – 18:00	Stefan Jorda	<b>About the Wilhelm and Else Heraeus-Foundation</b>
18:30	<i>DINNER</i>	

# Program

Tuesday, 12 February 2019

08:00            *BREAKFAST*

09:00 – 11:00    Ute Kraus                    **Teaching general relativity with sector models**  
(talk with workshop)

11:00 – 11:30    *COFFEE BREAK*

11:30 – 12:30    **Poster flash presentations I** (3 min. each)

12:45            *LUNCH*

14:15– 15:15    **Poster session I: Teaching resources**

15:15 – 15:45    *COFFEE BREAK*

## Workshop

15:45 – 17:15    Hans-Peter Nollert        **Teaching General Relativity using ruler and calculator: An interactive workshop based on the Shapiro effect**

## Hands-on sessions

15:45            Matěj Ryston                **Hands-on activities for teaching curvature**

16:25            Efstratios Kaptis            **Experimentation and simulations for teaching General Relativity**

17:05            Sven Weissenborn           **Virtual sector models**

## Group discussion

15:45            Markus Pössel  
(Chair)                        **Simplifications and misconceptions in General Relativity**

## Group discussion

16:45            Stuart Farmer  
(Chair)                        **Teaching General Relativity at school - exchange of experiences**

18:30            *DINNER*

# Program

Wednesday, 13 February 2019

08:00	<i>BREAKFAST</i>	
09:00 – 10:00	Corvin Zahn	Visualization of general relativity
10:00 – 11:00	Andrew Hamilton	Using general relativistic visualization to confront myths and misconceptions about what happens inside black holes
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Ellen Karoline Henriksen	Developing learning resources and investigating students' learning in general relativity and quantum physics
12:45	<i>LUNCH</i>	
14:15	<b>Excursion</b>	
		Walk to local sightseeing spot. (Destination depending on the weather.)
18:30	<i>DINNER</i>	

# Program

Thursday, 14 February 2019

08:00	<i>BREAKFAST</i>	
09:00 – 10:00	David Blair	Einsteinian reality: A challenge for school education
10:00 – 11:00	Magdalena Kersting	Curved spacetime: Investigating students' conceptual understanding in general relativity
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Poster flash presentations II (3 min. each)	
12:45	<i>LUNCH</i>	
14:15– 15:15	Poster session II: Design, evaluation, programs	
15:15 – 15:45	<i>COFFEE BREAK</i>	

## Workshop

15:45 – 16:45	Roberto Salgado	Relativity on rotated graph paper
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## Hands-on sessions

15:45	Friedrich Herrmann	Geodesic Lab - Have fun with geodesics
16:25	Ute Kraus Corvin Zahn	Wormholes: Interactive flight through a wormhole & 3D wormhole model
17:05	Stephan Preiß	Through Hildesheim at nearly the speed of light & The vehicle-through-the-garage-paradox visualized

## Group discussion

15:45	Markus Pössel (Chair)	Simplifications and misconceptions in General Relativity
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## Group discussion

16:45	Stuart Farmer (Chair)	Teaching General Relativity at school - exchange of experiences
18:30	<i>HERAEUS DINNER at the Physikzentrum (cold &amp; warm buffet, free beverages)</i>	

# Program

Friday, 15 February 2019

08:00	<i>BREAKFAST</i>	
09:00 – 10:00	Kimberly Coble	<b>Big ideas in cosmology: undergraduate students' ideas about the structure, fate, evolution, and curvature of the universe</b>
10:00 – 11:00	David Treagust	<b>Time for changing paradigms in science and in education</b>
11:00 – 11:30	<i>COFFEE BREAK</i>	
11:30 – 12:30	Scientific organizers	<b>Poster awards, summary, discussions and closing remarks</b>
12:45	<i>LUNCH</i>	

***End of the seminar and FAREWELL COFFEE / Departure***

*Please note that there will be **no** dinner at the Physikzentrum on Friday evening for participants leaving the next morning.*