

WHISPERS FROM THE DARK UNIVERSE.

Particles & Fields in the Gravitational Wave Era

DESY Theory Workshop

24–27 September 2024

Hamburg, Germany



ANNUAL DESY THEORY WORKSHOP: A series that started in late 70s

Organised by the German HEP theory community

Main theme alternates between Particle & collider phenomenology,
Astroparticles & cosmology, and Mathematical physics



DESY THEORY WORKSHOP
 Sept 28 – Oct 1, 2004
 DESY, Hamburg, Germany

PARTICLE COSMOLOGY

Dark matter, dark energy, early universe, high-energy cosmic rays

INTRODUCTORY LECTURES Sept 28, 2004

V. Berezhinsky	W. Buchmüller
R. Durrer	N. Kaloper

PLENARY TALKS Sept 29 – Oct 1, 2004

L. Anchordoqui	G. Giudice	M. Shaposhnikov
J. Berges	B. Leubundgut	G. Sigl
L. Bergström	M. Kaplaignth	C. Spiering
R. Brandenberger	L. Kofman	M. Sternheim
M. Doran	S. Masi	A. Vilenkin
O. Elgaroy	H.-P. Nilles	D. Wand
J. Frieman	P. Schneider	J. Webb
G. Gabadadze	D. Schwarz	

DESY Heinrich-Hertz Lecture on Physics
 by Michael Turner

PARALLEL SESSIONS

Contributions by young researchers are especially encouraged.
 Submit before July 15, 2004. Limited financial support available.

ORGANIZING COMMITTEE	CONFERENCE SECRETARIES
A. Hebecker	E. Paschos
C. Kiefer	G. Raffelt (Chair)
M. Laine	A. Ringwald
K. Mannheim	C. Spiering
S. Mikhaylov	C. Wetterich

Mrs. H. Van Loovenrijck, Hermann
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Information and registration: www.desy.de/desy-th/workshop2004



DESY THEORY WORKSHOP
SEPTEMBER 26 - 29, 2006
DESY, Hamburg, Germany



THE DARK UNIVERSE

Dark Matter, Dark Energy, String Cosmology

INTRODUCTORY LECTURES		Sept. 26, 2006
M. Drees (Bonn)	U. Ellwanger (Lyon)	
L. Kofman (Toronto)	M. Schmatz (Potsdam)	
PLENARY SESSIONS		Sept. 27-29, 2006
C.P. Burgess (Walterbos)	E.W. Kolb (Fermilab)	R.D. Peccei (Los Angeles)
K. Choi (Seoul)	B. Lehnigkdtorf (Potsdam)	G. Polesello (Pavia)
E. Copeland (Nottingham)	K. Maehlein (Duisburg)	A. Ragnaud (DESY)
W. de Boer (Toronto)	K. Ota (Munich)	S. Sarkar (Calicut)
G. Dvali (New York)	P. Steinhard (Potsdam)	M. Sasaki (Kyoto)
K. Hamaguchi (Tokyo)		J. Silk (Oxford)

DESY Heinrich-Hertz Lecture on Physics:

L. Suskind (Stanford)

PARALLEL SESSIONS

Contributions for young researchers are especially encouraged. Submit before July 15th, www.desy.de/youngresearcher for long presentation in plenary.

ORGANIZING COMMITTEE	REGISTRATION	INFORMATION
• C. Boehm • C. Donath • J. Ellwanger • J. Hamann • J. Kopp • J. Kopp • J. Kopp • J. Kopp • J. Kopp • J. Kopp	- Can be done online at the hotel - Ref. 1: J. Kopp - Ref. 2: J. Kopp - Ref. 3: J. Kopp - Ref. 4: J. Kopp - Ref. 5: J. Kopp - Ref. 6: J. Kopp - Ref. 7: J. Kopp - Ref. 8: J. Kopp - Ref. 9: J. Kopp	• P. Higgs • Higgs boson • Higgs boson • Higgs boson • Higgs boson • Higgs boson • Higgs boson • Higgs boson • Higgs boson • Higgs boson

Web page: www.desy.de/theory/2006/0626



DESY THEORY WORKSHOP

SEPT. 29 - OCT. 2, 2008

DESY Hamburg, Germany

DARK MATTER AT THE CROSSROADS



**HELMHOLTZ
GEMEINSCHAFT**

INTERNOUSTRAL LECTURES

P. Gondolo (Salt Lake City)
M.M. Nojiri (KEK)

Sept. 29, 2008

Y. Nomura (Berkeley)
J.A. Peacock (Edinburgh)

PLANARY SESSIONS

H. Baer (Tallahassee)
L. Baudis (Zürich)
J. Bernabetti (CERN)
K. Desch (Bonn)
J. Diamond (Santa Cruz)
H. Otsuka (Bernese)

G. Gilmore (Cambridge)
A. Ibarra (EPRF)
J.E. Kim (MIT)
R. Kerner (Geneva)
J. Lesgourgues (CEFRN)

A. Morselli (Piemonte)
M. Peschkin (Cornell)
I.L. Pospelov (Utrecht)
P. Schuster (Bonn)
F. Takayama (Cornell)

Sept. 30 - Oct. 2, 2008

DESY Heinrich-Hertz Lecture on Physics:
G. Veneziano (CEBRN & Collège de France, Paris)

PARALLEL SESSIONS

Contributions by young researchers are especially encouraged. Please submit before August 31st, 2008.
Limited financial support for attending Ph.D. students.

ORGANIZING COMMITTEE	REGISTRATION	INFORMATION
M. Buchtauer	Can be done online or by mail	M. Drees
A. Burdett	Ms. N. Hsu-Looman	Physikalisches Institut
M. Czakon	Ms. J. Kopp	Theoretical Group
M. Eberhard	DESY-Darmstadt	Nukleare 2
M. Frank	Norbert W. Menke	D-22607 Hamburg
G. Hübner	O. Dorsch (Hamburg)	Germany
A. Knappe	Germany	E-mail: workshop@desy.de and desy
A. Kogut	E-mail: Workshop@desy.de	
G. Ratzinger	Tel.: +49-(0)40-8608-1	
	Fax: +49-(0)40-8608-0777	

Web page: www.desy.de/~desy-theo/workshop2008

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**HELMHOLTZ
ZEMMERSTADT**

DESY THEORY WORKSHOP

SEPT. 23 - 26, 2014

DESY, Hamburg, Germany



PARTICLE COSMOLOGY AFTER PLANCK

PLENARY SPEAKERS INCLUDE

1. A. Riotto (Helsinki) 2. R. Arnowitt (JGTC Paris) 3. F.R. Bouchet (APMPS) 4. R. Baxter (Stanford) 5. T. Bringmann (Oxford) 6. J. Chua (Oxford) 7. R. Cunniff (Groningen)	8. G. Durkin (Durham) 9. M. Dvornik (CERN) 10. C. Gagne (Birmingham) 11. A. Hatzidakis (Groningen/Helsinki) 12. H. Kalluri (Stanford) 13. J. Kopp (BMPF Heidelberg) 14. R. Kerner (Groningen)
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Sept. 23 - 2014

- 0. Schmitt (Bielefeld)
- 1. D. Suter (JGU Hamburg)
- 2. R. Suranyi (Purdue University)
- 3. T. Takahashi (Tokyo)
- 4. T. Tait (Perth)
- 5. A. Wipf (Zurich)

DESY Heinrich-Hertz Lecture on Physics

A. Linde (Stanford)

Sept. 25, 2014

PARALLEL SESSIONS AND CONVENORS

Contributions by young researchers and students are encouraged. Abstracts can be submitted online starting 15 August 2014.

Local financial support for young scientists is available upon request.

Lecture Series by M. Lindner/H. P. Nilles/A. Schmitt (Bielefeld), H. P. Nilles (Dortmund)

Phenomenology by M. Lindner/H. P. Nilles/A. Schmitt (Bielefeld)

Strings & Mathematical Physics by G. Curio (Munich), M. Taroni (Bari)

Sept. 24 - 2014

ORGANIZING COMMITTEE

- 1. G. Curio
- 2. L. D. D. L. D. D.
- 3. A. Riotto (Oxford)
- 4. J. Kopp (BMPF Heidelberg)
- 5. J. Kopp (BMPF Heidelberg)
- 6. J. Kopp (BMPF Heidelberg)
- 7. M. Lindner (Dortmund)
- 8. H. P. Nilles (Dortmund)

CONTACT

Dr. M. Lindner
Dr. H. P. Nilles
Dr. A. Riotto
Dr. J. Kopp
Dr. J. Kopp
Dr. J. Kopp
Dr. J. Kopp
Dr. J. Kopp

INFORMATION

Website: <http://www.desy.de/theory-workshop>

Address: DESY, Notkestr. 85, 22607 Hamburg, Germany

Phone: +49 40 8606 2777

Background Image:

"House of Knowledge" (David Hockney)

Web page: <http://thw-workshop2014.desy.de>

FUNDAMENTAL PHYSICS IN THE COSMOS.

The early, the large and the dark universe

DESY Theory Workshop 26-29 September 2017 Hamburg, Germany

PLENARY Talks

A. Anagnostopoulos (Potsdam)	C. Casper (JAPC Paris)	S. Gatti (JAPC Paris)	L. Mersini (Birmingham)
T. Chiba (Marseille)	D. Choksey (Marseille)	A. Hebebrand (Bielefeld)	M. Fort (Potsdam)
M. Baryshnikov (Potsdam)	N. Christensen (Cambridge)	I. Hala (Cambridge)	P. Sarpis (Paris)
B. Bielewicz (Potsdam)	D. Croonin (CCTP Princeton)	C. Cariani (Bielefeld Meeting)	A. Kachel (DESY)
P. Caporin (Bielefeld)	D. Flanagan (UC San Diego)	D. Kaplan (SI, Johns Hopkins)	A. Schwab (MIT LIGO Meeting)

DESY Heinrich-Ullrich-Lecture on Physics

July 31st 2017

27 September 2017

PARALLEL SESSIONS

Contributions by young researchers are especially encouraged.
(deadline for abstract submission: 21 July 2017)

- Cosmology & Astrophysical Physics: V. Denzke (JAPC Paris & DESY), A. Baryshnikov (TH Munchen)
- Particle Phenomenology & Scattering: R. Kerner (JAPC Paris), A. Kachel (DESY)
- String & Mathematical Physics: V. Poritz (MIT Berlin), I. Garcia Escarbal (MPI Munich)

abstracts accepted:

- Black & Beyond: M. Baryshnikov, A. Bielewicz, D. Choksey, T. Chiba, C. Casper, D. Croonin, D. Flanagan, D. Kaplan, D. Kerner, D. Kachel, D. Schwab, I. Hala, L. Mersini, M. Fort, P. Sarpis, A. Anagnostopoulos

<http://th-workshop2017.desy.de>

Association of Theoretical Particle Physics
Deutscher Elektronen-Synchrotron
A Research Center for Particle Acceleration



DESY THEORY WORKSHOP
22 - 25 September 2020

DESY Virtual Theory Forum 2020

DESY Hamburg, Germany

Due to Covid, the initially planned DESY Theory workshop "Bright Ideas for a Dark Universe" was postponed to 2021.

Instead, we organised a non-topical forum across all HEP-TH areas, to give opportunity to students and postdocs to present their work, in a all-plenary format, together with a few overview talks by more senior colleagues.

A premiere in the long tradition of annual DESY Theory workshops: This meeting was hybrid. All sessions happened at the same time remotely via Zoom and in the DESY Main Auditorium. (We received many abstract submissions and could still invite 30 external participants on-site).

7 overview talks:

Yonit Hochberg (Jerusalem)
Mariam Tortola (Valencia)
Lorenzo Tancredi (Oxford)
Stefania Gori (Santa Cruz)
Livia Ferro (LMU)
Daniel Figueroa (Valencia)
Stefan Vogl (Munich)

Hertz lecturer: Helen Quinn

Organising committee:

F. Bishara (DESY), C. Garcia Cely (DESY),
J. Harz (TU Munich), O. Hohm (Humboldt U.),
H. Kim (Weizmann), T. Konstandin (DESY),
P. Liendo (DESY), G. Papathanasiou (DESY), R. Porto (DESY),
R. Rühle (CERN), B. Shakya (CERN),
G. Servant (DESY & UHH), S. Westhoff (U. Heidelberg).

BRIGHT IDEAS FOR A DARK UNIVERSE.

DESY Theory Workshop 21-24 September 2021 Hamburg, Germany

Plenary Talks

U. Haischman (E. Haischman)	G. Giamprini (E. Haischman)	M. Haischman (E. Haischman)	G. Haischman (E. Haischman)
V. Cariani (E. Haischman)	M. Haischman (E. Haischman)	G. Haischman (E. Haischman)	A. Haischman (E. Haischman)
M. Giamprini (E. Haischman)	M. Haischman (E. Haischman)	G. Haischman (E. Haischman)	A. Haischman (E. Haischman)
V. Cariani (E. Haischman)	M. Haischman (E. Haischman)	G. Haischman (E. Haischman)	A. Haischman (E. Haischman)
M. Giamprini (E. Haischman)	M. Haischman (E. Haischman)	G. Haischman (E. Haischman)	A. Haischman (E. Haischman)
V. Cariani (E. Haischman)	M. Haischman (E. Haischman)	G. Haischman (E. Haischman)	A. Haischman (E. Haischman)

DESY Heinrich Heine Lecture on Physics

Mathis Ziegler (IAS Princeton)

Parallel Sessions

Contributions by young researchers are organised into sessions:

- **Experiments & Astrophysical Physics:** G. Giamprini (E. Haischman), A. Haischman (E. Haischman)
- **Particle Phenomenology:** G. Giamprini (E. Haischman), A. Haischman (E. Haischman)
- **String & Mathematical Physics:** G. Giamprini (E. Haischman), A. Haischman (E. Haischman)

DESY THEORETICAL PHYSICS

- A. Haischman (E. Haischman)
- A. Haischman (E. Haischman)
- A. Haischman (E. Haischman)
- A. Haischman (E. Haischman)

<http://th-workshop2021.desy.de>

CLUSTER OF EXCELLENCE

DESY

Welcome to the DESY Theory Workshop 2024

Organizing Committee

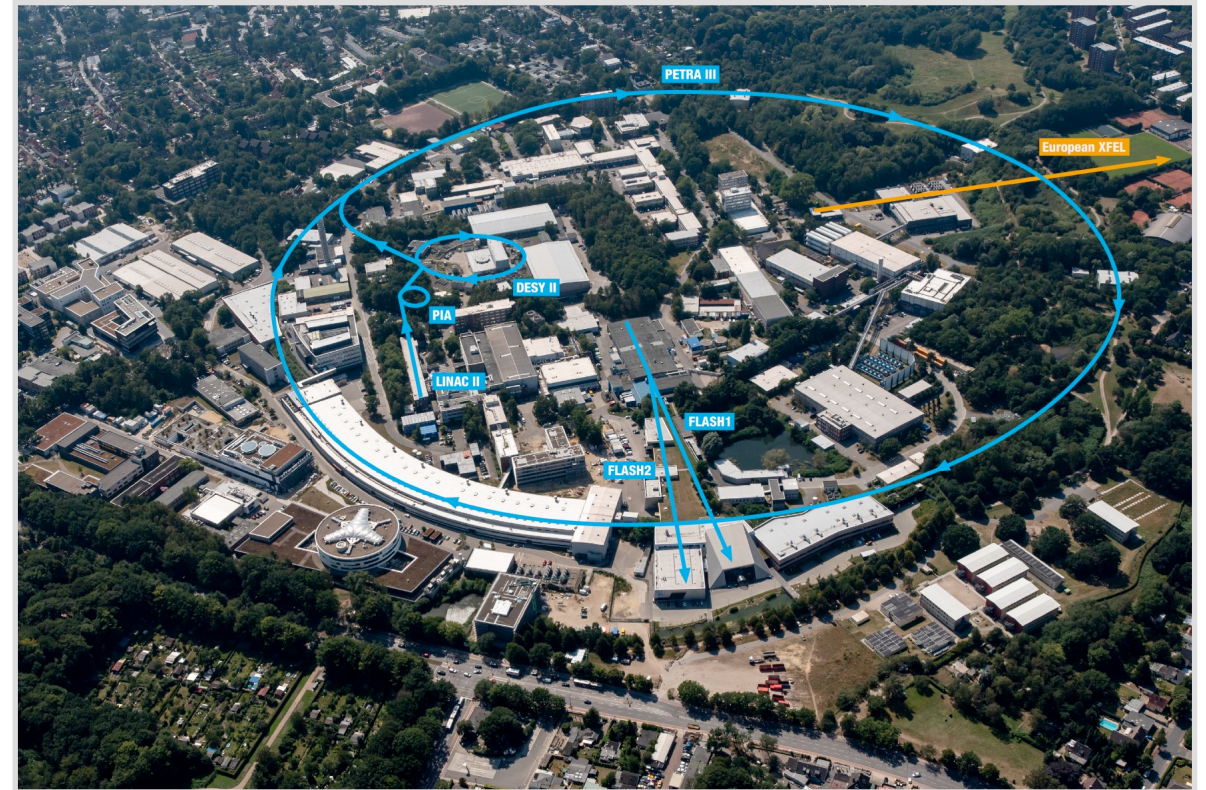
- Bruce Allen
- Elina Fuchs
- Alejandro Ibarra
- Jörg Jäckel
- Hyungjin Kim
- Thomas Konstandin
- Joachim Kopp
- Laura Sagunski
- Kai Schmitz
- Pedro Schwaller
- Géraldine Servant
- Bibhushan Shakya
- Cora Uhlemann
- Alexander Westphal

Session Conveners

- Claudia Cornella
- Guillem Domenech
- Felix Kling
- Craig Lawrie
- Andrea Mitridate
- Ida Zadeh

Local Organizers

- Cristina Guerrero
- Inna Henning
- Julia Herrmann
- DESY Meeting Service
- All the helping hands from the DESY theory group



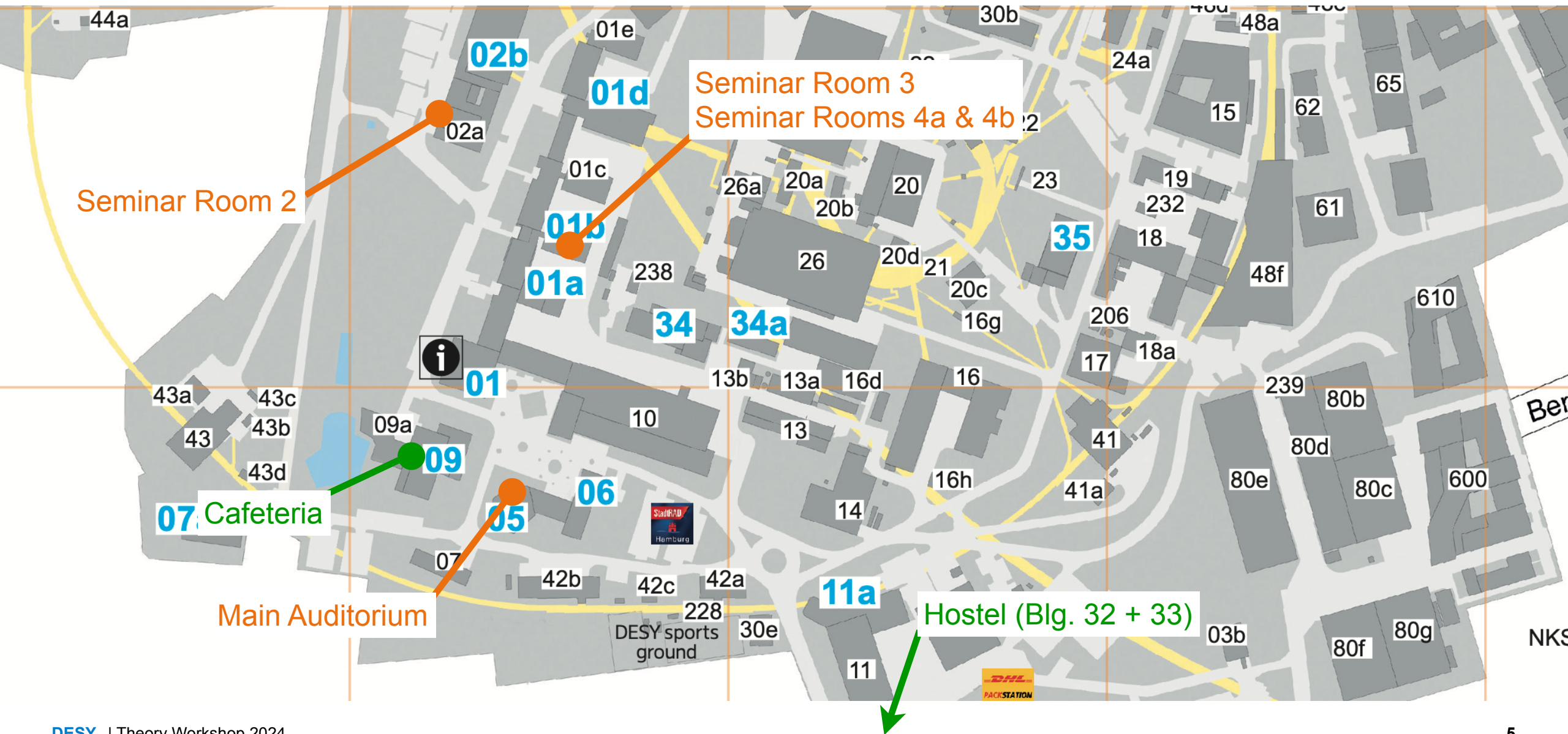
216 registered participants, 5 (!) parallel sessions

Practical Information

- **WiFi:** eduroam or Science-Hotspot
- **Coffee:** in front of the Main Auditorium
- **Lunch:** DESY Cafeteria
- **Hostel:** check out time 10:00 am
pay your hostel bill at the hostel office
(building 6, room 120, Mo–Fr 9–13)
or via bank transfer)
- **Health:** if you feel sick, please wear a mask.
(masks & Covid tests are available
at the registration desk)



Parallel Sessions



Social Events

- **Reception:** today, 18:30, Foyer Main Auditorium
- **Dinner:** Thursday, 19:00, DESY Cafeteria
- **Group Photo:** Wednesday 11:00 in front of the Main Auditorium



Heinrich Hertz Lecture

Prof. Dr. Marc Kamionkowski
John Hopkins University

Consensus and Confusion in Cosmology

Thursday, 26 September 2024
17:30 DESY Auditorium



Information for Speakers

- please **upload your slides to Indico** at least 30 minutes before your session starts
- if you don't have a DESY Indico account, send the slides to the conveners of your session
- plenary speakers, session conveners: see registration desk for reimbursement paperwork



We wish you an inspiring and productive workshop.



Bruce Allen · Claudia Cornella · Guillem Domenech · Elina Fuchs

Alejandro Ibarra · Jörg Jäckel · Hyungjin Kim · Felix Kling

Thomas Konstandin · Joachim Kopp · Craig Laurie · Andrea Mitridate

Laura Sagunski · Kai Schmitz · Pedro Schwaller · Géraldine Servant

Bibhushan Shakya · Cora Uhlemann · Alexander Westphal · Ida Zadeh