



Prof. Arno Straessner

Studiendekan der Fakultät Physik

Welcome! Herzlich Willkommen!
Fakultät Physik der TU Dresden

Welcome and Introduction to the Master of Physics Programme

- Introduction to the Master of Physics Programme
- Information and Support by the Student Council



TU Dresden

- 32.000 Students
- 8.000 Employees
- 600 Professors
- 120 Study Courses
- 17 Departments
- 5 Schools

School of Science

School of Humanities and Social Sciences

School of Engineering Sciences

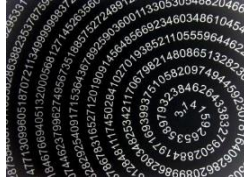
School of Civil and Environmental Engineering

School of Medicine



School of Science

Bereich Mathematik und Naturwissenschaften



Mathematics



Physics



Chemistry



Biology



Psychology

Department of Physics

Recknagelbau



Department of Physics

~ 1000 Students

- 350 Bachelor students
- 150 Master students
- 300 Students in teacher training in physics
- 220 Ph.D. students

~ 50 Lectures

~ 10 Seminars

~ Lab courses

Exzellenz cluster

- Complexity and Topology in Quantum Matter
- Physics of Life

Research networks

- DFG - German Science Foundation: Sonderforschungsbereiche, Forschungsgruppen, Schwerpunktprogramme, Graduiertenkollegs
- International Max Planck Research School, International Helmholtz Research School
- Federal Ministry of Education and Research: Forschungsschwerpunkte, Forschungsinfrastrukturen



Institutes at the Department of Physics

Applied
Physics



Solid State and
Materials Physics



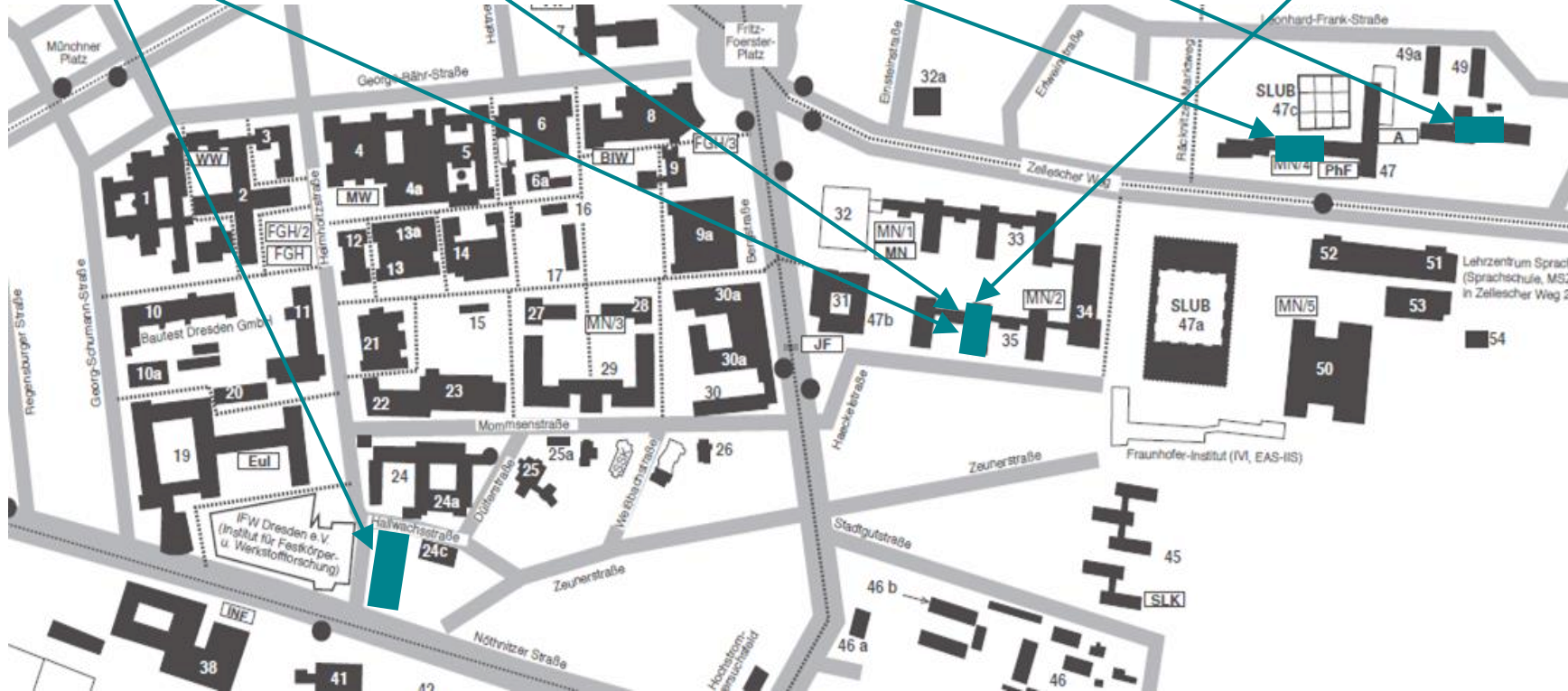
Theoretical
Physics



Nuclear and
Particle Physics



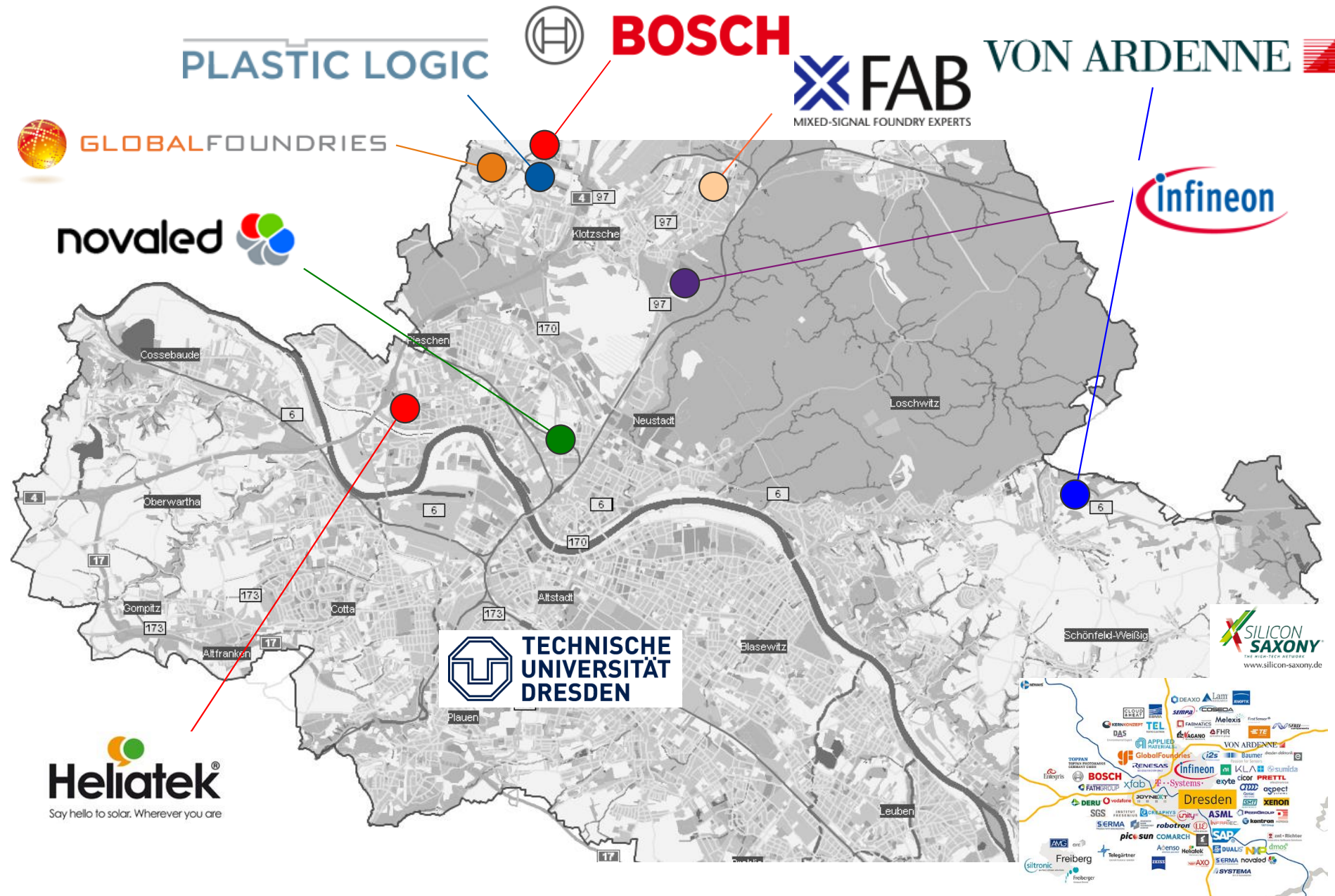
Physics
Education



Research Institutions in Dresden



Research Oriented Industry in Dresden



University: Research and Education

Department of Physics

Research

<https://tu-dresden.de/mn/physik/forschung>



Teaching

<https://tu-dresden.de/mn/physik/studium>

- Lectures
- Tutorials
- Seminars
- Lab courses
- Scientific theses
- ...

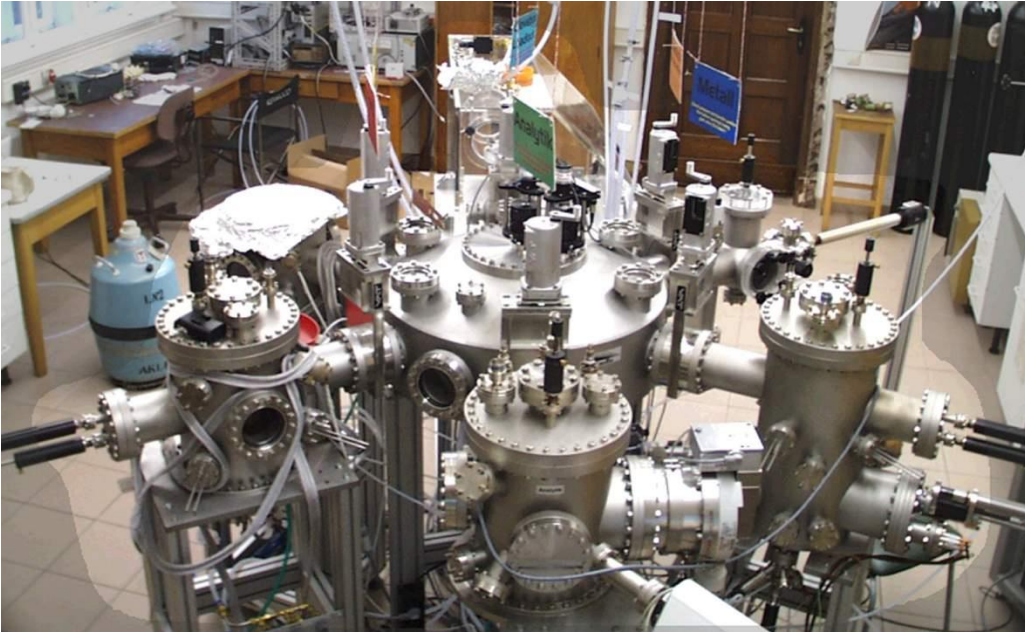
Department / Organisation

<https://tu-dresden.de/mn/physik/die-fakultaet>

- Dean (Prof. Timm)
- Dean of Studies (Prof. Straessner)
- Department (Dr. Grafström, Dr. Brose, Fr. Gerber, Fr. Pätzold)
- Examination Office
- Student Council Physics <https://www.pfsr.de/>
- Coordination of Master Programme
(Dean of Studies, BA: Matthias List, MA: contact: Lisa Lehmann)
- Academic Advisor (Dr. Dörr)

Specialization Area: Applied Physics and Photonics

- Organic electronics:
LEDs, solar cells, transistors, ...
- Nano optics



DEUTSCHER ZUKUNFTSPREIS
Preis des Bundespräsidenten
für Technik und Innovation



Specialization Area: Solid State Physics and Materials

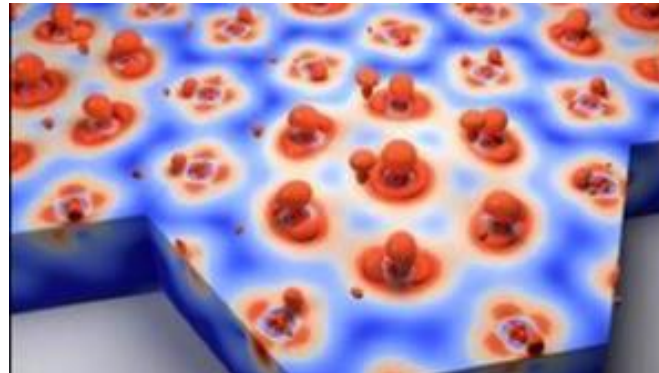


HZDR
HELMHOLTZ ZENTRUM
DRESDEN ROSENDORF

**Intense magnetic field
laboratory Dresden**

Materials with exotic properties:

- Superconductors
- Magnetism
- Heavy fermions
- Low-dimensional systems

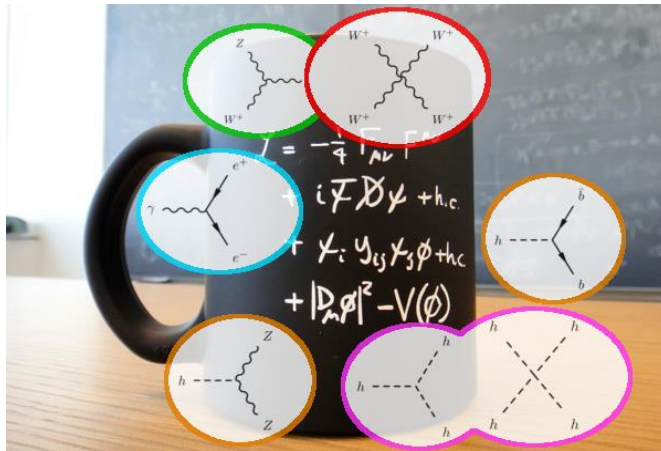


Specialization Area: Nuclear and Particle Physics

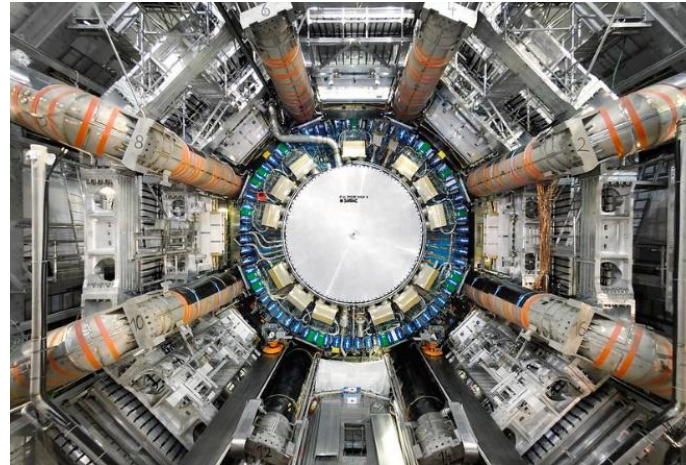
- High energy physics at the LHC:
 - Standard Model physics, Higgs physics, ...
- Neutrino physics
- Nuclear astrophysics
- Medical physics and particle beams
- Particle physics theory



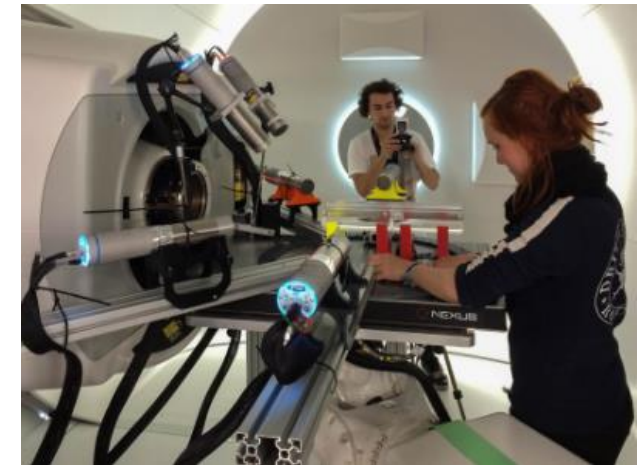
SNO+ Detector in Sudbury



Standard Model of Particle Physics



ATLAS Detector at CERN



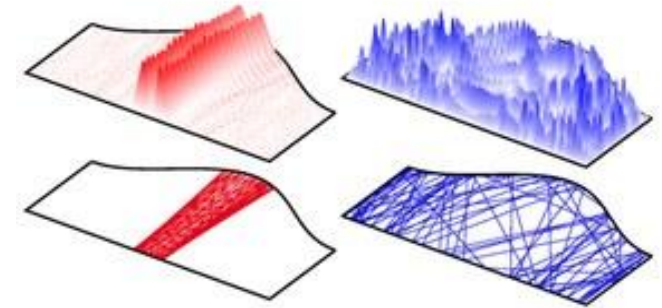
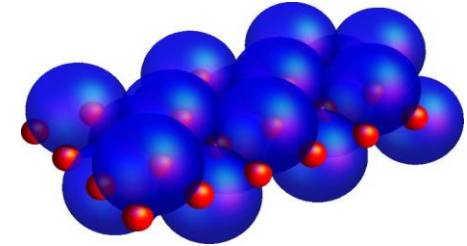
Particle Detectors for Medical Physics

Specialization Area: Theoretical Physics



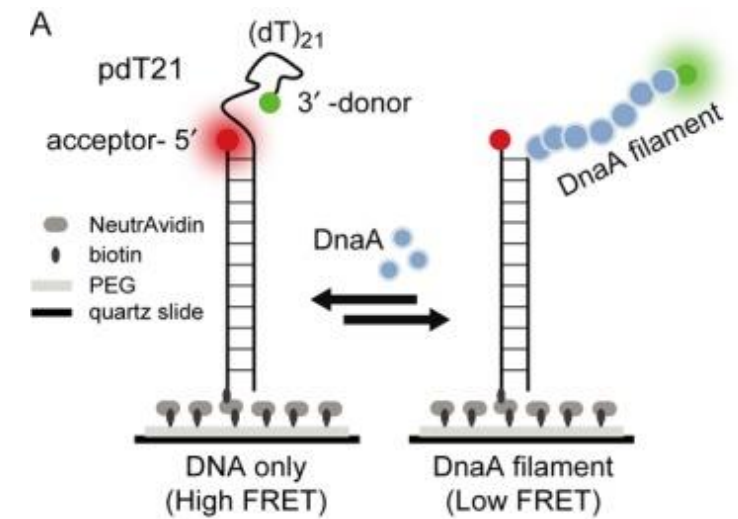
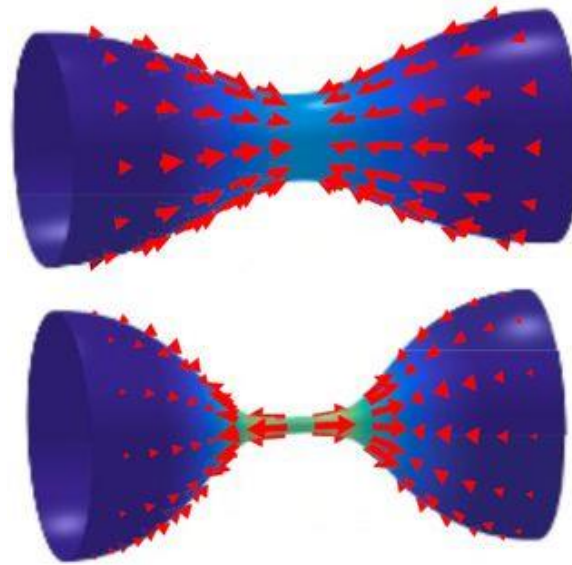
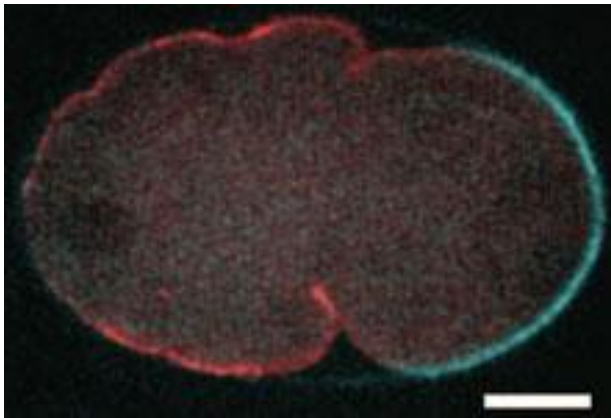
Broad spectrum:

- Solid state and many-body physics
- Quantum optics
- Non-linear dynamics
- Statistical physics
- Elementary particle physics
- Theory of complex networks



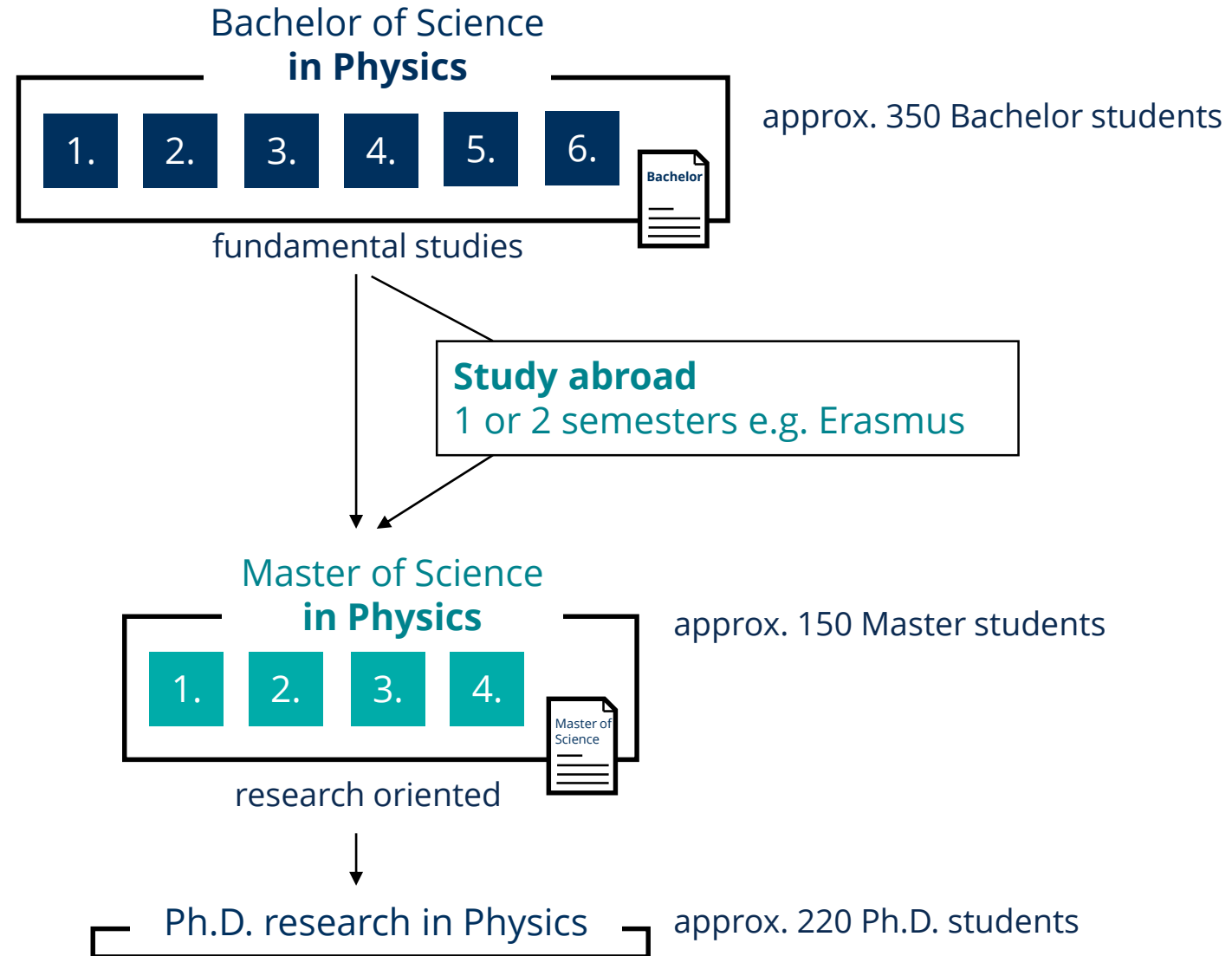
Specialization Area: Biophysics, soft condensed matter physics

- Dynamics of bio molecules
- Mechanics of cells
- Tissue organisation
- Experiment und theory



Quelle: Cheng *et al.*, Nucl. Acids Res. **43**, 396 (2015)

Physics @ TU Dresden



Master of Physics

Semester	experimental	theoretical	applied	elective courses	
7	Experimental Physics	Theoretical Physics	Advanced Scientific Seminar	Specialisation Physics:	Non-physics supplementary courses
8				Applied Solid State Physics and Photonics Solid State and Material Physics Soft Condensed Matter and Biological Physics Particle and Nuclear Physics Theoretical Physics	
9	Research Phase Master Scientific Studies Master Thesis				
10					

Study Plan Start in Winter term

Modul number	Modul name	1st Semester	2nd Semester (M)	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			15
Phy-Ma-Hsem	Advanced Seminar Scientific		0/0/0/2/0/1/0 1xEx			6
Phy-Ma-Exp	Experimental Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-Theo	Theoretical Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		30
					Master Thesis	30
Elective Compulsory Field Non-Physics Supplement ¹						
Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-PHI	Non-Physics Supplementary Course Philosophy	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-MSB	Non-Physics Supplementary Course Mechanical Engineering	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
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Phy-Ma-NpErg-BWL	Non-Physics Supplementary Course Business Administration	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/**/*/*/*/*/0 Ex*	*/**/*/*/*/*/0 Ex*			13
CP		30	30	30	30	120

¹ one module must be chosen

* depending on choice made by the student

M Mobility window according to § 6 para. 1 sentence 4

CP	Credit Points	Ex	Examination(s)	PW	Preliminary academic work	L	Lecture	E	Exercise
T	Tutorial	S	Seminar	P	Practical training	St	Self-study	SW	Scientific work

Study Plan Start in Winter term

Modul number	Modul name	1st Semester	2nd Semester (M)	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			15
Phy-Ma-Hsem	Advanced Seminar Scientific		0/0/0/2/0/1/0 1xEx			6
Phy-Ma-Exp	Experimental Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-Theo	Theoretical Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		30
					Master Thesis	30
Elective Compulsory Field Non-Physics Supplement ¹						
Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-PHI	Non-Physics Supplementary Course Philosophy	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-MSB	Non-Physics Supplementary Course Mechanical Engineering	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-WSW	Non-Physics Supplementary Course Materials Science	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BWL	Non-Physics Supplementary Course Business Administration	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/*/*/*/*/*/0 Ex*	*/*/*/*/*/*/0 Ex*			13
CP		30	30	30	30	120

¹ one module must be chosen

* depending on choice made by the student

M Mobility window according to § 6 para. 1 sentence 4

CP	Credit Points	Ex	Examination(s)	PW	Preliminary academic work	L	Lecture	E	Exercise
T	Tutorial	S	Seminar	P	Practical training	St	Self-study	SW	Scientific work

Specialisation Physics

- 5 specialisation areas:
 - Applied Solid State Physics and Photonics
 - Solid State and Material Physics
 - Soft Condensed Matter and Biological Physics
 - Particle and Nuclear Physics
 - Theoretical Physics
- Online catalogue of courses:
 - <https://tu-dresden.de/mn/physik/studium/lehrveranstaltungen/vertiefungsgebiete-bachelor-und-master>
- Some courses are valid for more than one specialisation areas
- Naming scheme:
 - **VW**: course for Master and Bachelor students
 - **VWo**: obligatory course in the respective specialisation area - shall be taken either during Bachelor or Master studies
 - **VWm**: course preferentially for Master students
 - **VF**: optional course
- The courses define the possible topics of the oral exam in the specialisation area: 2 topics need to be selected for the exam

Example

Specialization area: "applied solid state physics and photonics" / "Angewandte Festkörperphysik und Photonik"

Lecturer(s):	SWS (V/Ü)	Title	Category
Leo	2/0	>Semiconductor Physics	VWo
Eng	2/0	>Nanooptics - MC Nanobiophysics	VWo
Helm / Winnerl	2/0	>Semiconductor Quantum Structures	VW
Eng / Bode	3/1	>Raserkraftmikroskopie	VW
Helm / Zhou	2/0	>Material Science using Ions	VF

Specialization area: "particle and nuclear physics" / "Teilchen- und Kernphysik"

Lecturer(s):	SWS (V/Ü)	Title	Category	L
Junghans	2/1	>Nuclear Physics: Fundamentals and Applications	VW	C

- The language of all oral exams can be English or German

Specialisation Physics

- 5 specialisation areas:
 - Applied Solid State Physics and Photonics
 - Solid State and Material Physics
 - Soft Condensed Matter and Biological Physics
 - Particle and Nuclear Physics
 - Theoretical Physics
- Master and Bachelor studies are independent
- You may select specialization topics in the (oral) Master examinations which you already had selected as specialization in your Bachelor studies
- However, the examination results of the Bachelor course cannot be recognized as examination results of the Master
- You can take courses from more than one specialization - only at the time of inscription for the oral Master exam you select "your" specialisation

Example

Specialization area: "applied solid state physics and photonics" / "Angewandte Festkörperphysik und Photonik"

Lecturer(s):	SWS (V/Ü)	Title	Category
Leo	2/0	>Semiconductor Physics	VWo
Eng	2/0	>Nanooptics - MC Nanobiophysics	VWo
Helm / Winnerl	2/0	>Semiconductor Quantum Structures	VW
Eng / Bode	3/1	>Raserkraftmikroskopie	VW
Helm / Zhou	2/0	>Material Science using Ions	VF

Specialization area: "particle and nuclear physics" / "Teilchen- und Kernphysik"

Lecturer(s):	SWS (V/Ü)	Title	Category	L
Junghans	2/1	>Nuclear Physics: Fundamentals and Applications	VW	D

Specialisation Physics

- The examination prerequisite is a "portfolio of written problem solutions" which is comprised of
 - Applied Solid State Physics and Photonics:
 - laboratory practical reports
 - Solid State and Material Physics:
 - laboratory practical reports
 - Soft Condensed Matter and Biological Physics
 - computer or laboratory practical reports
 - Particle and Nuclear Physics
 - reports from a mix of lab and QFT practical work
 - Theoretical Physics
 - written problem solutions completed in each of (at least) three courses, e.g. as part of the tutorials

Example

Specialization area: "applied solid state physics and photonics" / "Angewandte Festkörperphysik und Photonik"

Lecturer(s):	SWS (V/Ü)	Title	Category
Leo	2/0	>Semiconductor Physics	VWo
Eng	2/0	>Nanooptics - MC Nanobiophysics	VWo
Helm / Winnerl	2/0	>Semiconductor Quantum Structures	VW
Eng / Bode	3/1	>Raserkraftmikroskopie	VW
Helm / Zhou	2/0	>Material Science using Ions	VF

Specialization area: "particle and nuclear physics" / "Teilchen- und Kernphysik"

Lecturer(s):	SWS (V/Ü)	Title	Category	L
Junghans	2/1	>Nuclear Physics: Fundamentals and Applications	VW	C

Study Plan Advanced Scientific Seminar

Modul number	Modul name	1st Semester	2nd Semester (M)	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			15
Phy-Ma-Hsem	Advanced Seminar Scientific		0/0/0/2/0/1/0 1xEx			6
Phy-Ma-Exp	Experimental Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-Theo	Theoretical Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		30

- Advanced scientific seminars are offered by the physics institutes of the department
- Seminar can be taken in Winter and Summer term
- Seminar topics are announced each semester in the course catalog:

https://tu-dresden.de/mn/physik/studium/lehrveranstaltungen/lectures_english

- **Example:**

›Seminar ITP: Topics in Biological Physics Phy-Ma-Hsem (English)

Friedrich

Study Plan Experimental and Theoretical Physics

Modul number	Modul name	1st Semester	2nd Semester (M)	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			15
Phy-Ma-Hsem	Advanced Seminar Scientific		0/0/0/2/0/1/0 1xEx			6
Phy-Ma-Exp	Experimental Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-Theo	Theoretical Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		30

- Experimental and Theoretical Physics:
 - Winter term: lectures and tutorials
 - Summer term: tutorials and self-studies
- Oral examination can be taken in every term
- Module examinations taken prior to the semesters specified in the study schedule allow for a "free attempt":
 - Upon request, module examinations or examined assessments graded at least “pass” (4.0) in the free attempt may be repeated once the next time the examination is regularly held in order to improve the grade. In this case, the better assessment counts.

Study Plan Experimental and Theoretical Physics

Modul number	Modul name	1st Semester	2nd Semester (M)	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			15
Phy-Ma-Hsem	Advanced Seminar Scientific		0/0/0/2/0/1/0 1xEx			6
Phy-Ma-Exp	Experimental Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-Theo	Theoretical Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		30

- **Experimental Physics:**
 - **key concepts of experimental physics**
 - common strategies in the experimental investigation of structures and excitations of physical systems at different scales of size and energy
 - correlate physical concepts and methods of different experimental fields
- **Theoretical Physics:**
 - **overview of the fields of theoretical physics and their interrelations**
 - describe theoretical descriptions of selected physical phenomena in a comprehensible way
 - combine theoretical fundamentals and methods
 - independently explore complex physics questions

Study Plan Non-physics Supplement

Elective Compulsory Field Non-Physics Supplement¹

Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-PHI	Non-Physics Supplementary Course Philosophy	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-MSB	Non-Physics Supplementary Course Mechanical Engineering	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-WSW	Non-Physics Supplementary Course Materials Science	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-BWL	Non-Physics Supplementary Course Business Administration	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*
Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/**/*/*/*/*/* Ex*	*/**/*/*/*/*/* Ex*

Mathematics
 Biomathematics
 Chemistry
 Biology
 Molecular Biology
 Computer Science
 Philosophy
 Electrical Engineering
 Mechanical Engineering
 Materials Science
 Economics
 Business Administration

- Elective Compulsory Non-Physics Supplement:
 - 25 topics in 12 non-physics areas
 - typically 8 SWS (double periods of lecture/tutorial/seminar/lab) and 13 credit points
 - The module exam consists of 2 or 3 course assessments
 - The module grade will be calculated from the individual grade of each examination weighted 1:1(:1)
 - All oral exams are conducted in German or English, at the student's discretion.
 - All written examinations take place in the language of instruction.
 - If a module grade yields "not passed", instead of repeating the exam, also another topic and/or another minor can be chosen.

Study Plan Non-physics Supplement

Elective Compulsory Field Non-Physics Supplement¹

Phy-Ma-NpErg-MAT	Non-Physics Supplementary Course Mathematics	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIM	Non-Physics Supplementary Course Biomathematics	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-CHE	Non-Physics Supplementary Course Chemistry	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-BIO	Non-Physics Supplementary Course Biology	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-MBE	Non-Physics Supplementary Course Molecular Bioengineering	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13
Phy-Ma-NpErg-INF	Non-Physics Supplementary Course Computer Science	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13
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Phy-Ma-NpErg-ELT	Non-Physics Supplementary Course Electrical Engineering	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13
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Phy-Ma-NpErg-VWL	Non-Physics Supplementary Course Economics	*/*/*/*/*/0 Ex*	*/*/*/*/*/0 Ex*			13

- Elective Compulsory Non-Physics Supplement:
 - Catalogue and further information:
 - https://tu-dresden.de/mn/physik/studium/master/lehveranstaltungen/nichtphysikalische_ergaenzung_master?set_language=de

Study Plan Scientific Studies and Master Thesis

Modul number	Modul name	1st Semester	2nd Semester (M)	3rd Semester	4th Semester	CP
		L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	L/E/T/S/P/St/SW	
Compulsory Field						
Phy-Ma-Vert	Specialisation Physics	*/*/0/0/*/*/0 1xPW	*/*/0/0/*/*/0 1xEx			15
Phy-Ma-Hsem	Advanced Seminar Scientific		0/0/0/2/0/1/0 1xEx			6
Phy-Ma-Exp	Experimental Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-Theo	Theoretical Physics	3/1/0/0/0/0/0	0/0/1/0/0/3/0 1xEx			13
Phy-Ma-WisStu	Scientific Studies			0/0/0/0/0/0/22,5 weeks 1xEx		30
					Master Thesis	30

- Scientific Studies and Master Thesis:
 - research oriented project, usually in the field of the specialization area
 - oral presentation at the end of the scientific studies
 - Master thesis is usually a continuation of the research project of the scientific studies

Master of Physics

- Please, use these web pages for further information, study documents, catalogues and more:
 - <https://tu-dresden.de/mn/physik/studium/master>
- If you find inconsistencies or unclear information, please, contact me.
- In the annotated course catalogue:
 - <https://tu-dresden.de/mn/physik/studium/lehrveranstaltungen#Master%20Kursveranstaltungen>
 - links to OPAL pages for course organization:
 - course material, videos, ... of lectures, tutorials, seminars, ...
 - inscription to tutorial groups, selection of seminar topics, ...
 - OPAL inscriptions are for organization only
 - Inscription to exams must be done at the examination office or through the HISQIS web pages

Master of Physics Examinations and Preparation

- Not graded:
 - Advanced scientific seminar (can be taken in any term)
 - Lab and computer courses as part of the "examination prerequisite" in the physics specialisation
 - Oral presentation of the Scientific Studies
- 3 oral exams, can be taken in any term, but typically at the end of the 2nd term:
 - experimental and theoretical physics
 - physics specialisation
- Preparation:
 - lectures, tutorials, self-study
 - recommendation: preparation for oral exams is best done in small groups / teams!
- No formal inscription to lectures needed
- Specialisation area is selected only at the time of inscription to the corresponding oral exam

Master of Physics Credit Points and Grades

- Credit points and grading weights are independent
- Weights for the final grade:
 - 35% Master's thesis (30 CP)
 - 26% Physics Specialization (15 CP)
 - 13% Experimental Physics (13 CP)
 - 13% Theoretical Physics (13 CP)
 - 13% Elective compulsory module of the non-physics supplement (13 CP)
- Specialisation : Experimental Ph.: Theoretical Ph. : Non-physics suppl.= 2:1:1:1
- Specialisation + Master thesis = 61%
- "key concept" lectures (exp. + theor.) = 26%

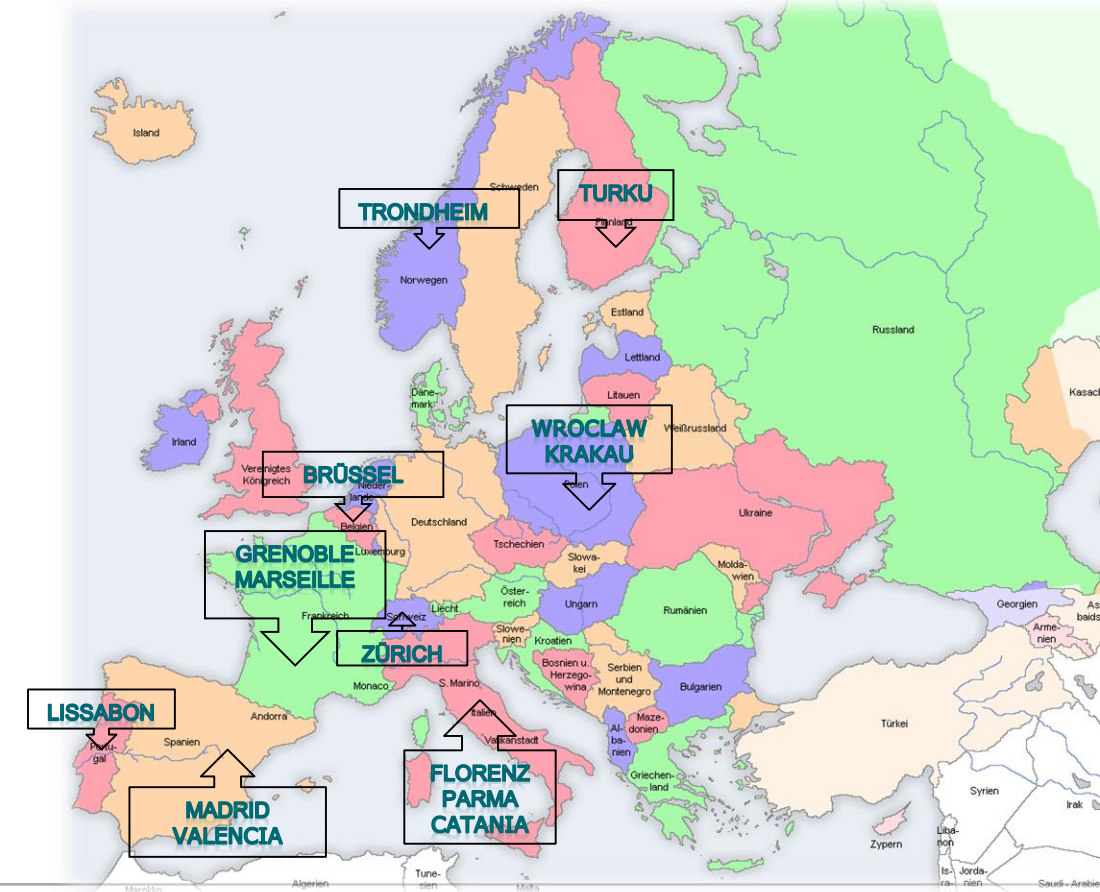
Master of Physics Study abroad



- Courses taken abroad can be integrated in the specialisation area (can also be one of the 2 topics in the oral exam)
- At foreign Universities you do not need to take graded examinations (oral exams in Dresden)
- 2 semesters abroad:
 - better integration at foreign University
 - more easy organisation in case of full-year exchange studies (sometimes obligatory in ERASMUS programme)
- 1 semester abroad:
 - summer term is recommended
- experimental and theoretical physics courses may be completed within 1 semester
- More information: <https://tu-dresden.de/mn/physik/studium/beratung-und-service/internationales>

Study abroad

- e.g. Erasmus+: partner Universities in Belgium, Finland, France, Italy, Norway, Poland, Portugal, Spain, Switzerland
- Check Erasmus information pages of the Physics Faculty:
<https://tu-dresden.de/mn/physik/studium/beratung-und-service/internationales/erasmus>
- Further contacts:
- **Erasmus Coordinator (Europe)**
 - Prof. W. Strunz, ERASMUS.Physik@tu-dresden.de
- **International Officer Physics** (weltweit, insb. nicht-EU)
 - Prof. J. Budich, iop@tu-dresden.deor at the International Office TU Dresden
- Internships abroad: Leonardo Office Sachsen www.leo.tu-dresden.de



Support for you!

- Buddy programme / mentoring groups: student council PFSR: <https://www.pfsr.de/>
- Learning room Physics (Mon-Thu, 6+7. DS, REC/D16)
- Coordination of the Master of Physics studies: contact: Lisa Lehmann, Prof. Arno Straessner
- Academic Advisor - Master of Physics: Dr. M. Dörr
- Examination Office
- IT: Dr. Brose

Φ LERNRAUM
PHYSIK



Central IT Services at the Department of Physics

<https://tu-dresden.de/mn/physik/die-fakultaet/it-service>



Dr. Jens Brose

 E-MAIL SENDEN



Tel.  +49 351 463-32104
 Jens.Brose@tu-dresden.de
Recknagel-Bau, Raum C116

INFRASTRUKTUR

> PC-Pools

> W-Lan

> Softwarelizenzen für Studierende

> Nutzerzertifikat beantragen

 Opal

PC Pools: REC C117 / REC B113: 12 / 25 PC mit Linux (Ubuntu 22.04)

- **Access:**

- TU Dresden ZIH computing account required (password updated)
- Campus card, Mensa card or copy card (to open the door to the PC pool)

- **More information:**

- <https://tu-dresden.de/mn/physik/die-fakultaet/it-service/pc-pools>

- **Central TU Dresden computing services information:**

- <https://tu-dresden.de/zih/dienste/service-desk/ese>

Welcome and Introduction to the Master of Physics Programme

- Introduction to the Master of Physics Programme
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- TUDIAS Language Programme
- Information and Support by the Student Council



Directorate 8 – Student Affairs and Continuing Education

Services and Support Offers During Your Studies

Student Orientation 2023/2024

Do you have questions about studying?



➤ tud.de/studium/beratung

TU Dresden University of Technology accompanies and supports you

CENTRAL STUDENT INFORMATION AND COUNSELLING SERVICE

...is there for you in difficult situations. Having doubts or facing problems during your studies?

Offers

- Individual counselling sessions
- Workshops
- Webinars
- Early warning system PASST?!



➤ **tud.de/zsb/studienberatung**

TU Dresden University of Technology accompanies and supports you

ADMISSION OFFICE

...if you were educated in Germany

INTERNATIONAL OFFICE

...for international students



Topics

- Re-registration for the following semester, De-registration, Certificates
- Taking a leave of absence
- Changing degree programmes

↗ tud.de/imma

↗ tud.de/international

TU Dresden University of Technology accompanies and supports you

Gaining international experience

study abroad
with the support of the
International Office



**The international tutor
programme**
in the International Office

Internship abroad
with support of the
LEONARDO-Büro

Cultural Office
in the International
Office

↗ **tud.de/international**
↗ **tud.de/leonardo**

TU Dresden University of Technology accompanies and supports you

CAREER SERVICE

Topics & Offers

- Key Competencies
- Presenting skillfully
- Applying successfully
- CV Check
- Career Counseling
- Life Streams with employers
- Jobs & Internships
- On-Campus Jobfairs
- Career Orientation



➤ tud.de/career

TU Dresden University of Technology and partners accompanies and supports you in many situations

Study Success Projects

↗ tud.de/deinstudienerfolg

Studentenwerk Dresden

↗ Studentenwerk-dresden.de



Student Council

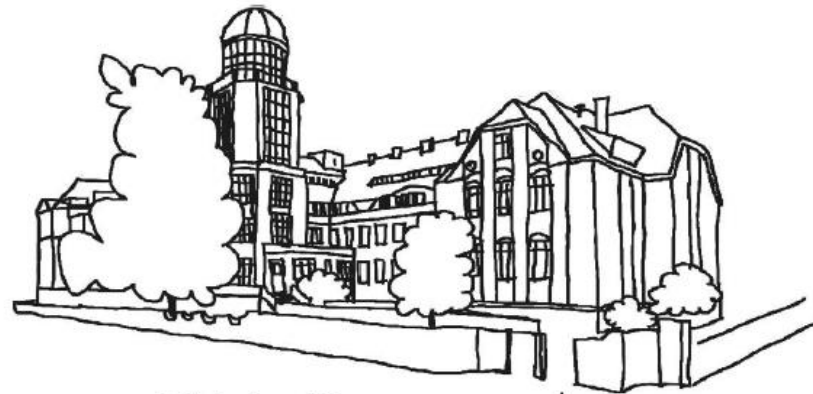
tud.de/stura

↗ tud.de/stura/fachschaften

Student Advisory Service

↗ tud.de/studienfachberatung

We are here to help!



TU Dresden

servicecenter.studium@tu-dresden.de

+49 351 463 42000

tud.de/studium/beratung



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TU Dresden Foreign Language Courses



Languages on offer

Ancient Greek

English

Japanese

Russian

Arabic

Finnish

Latin

Swedish

Chinese

French

Polish

Spanish

German

Italian

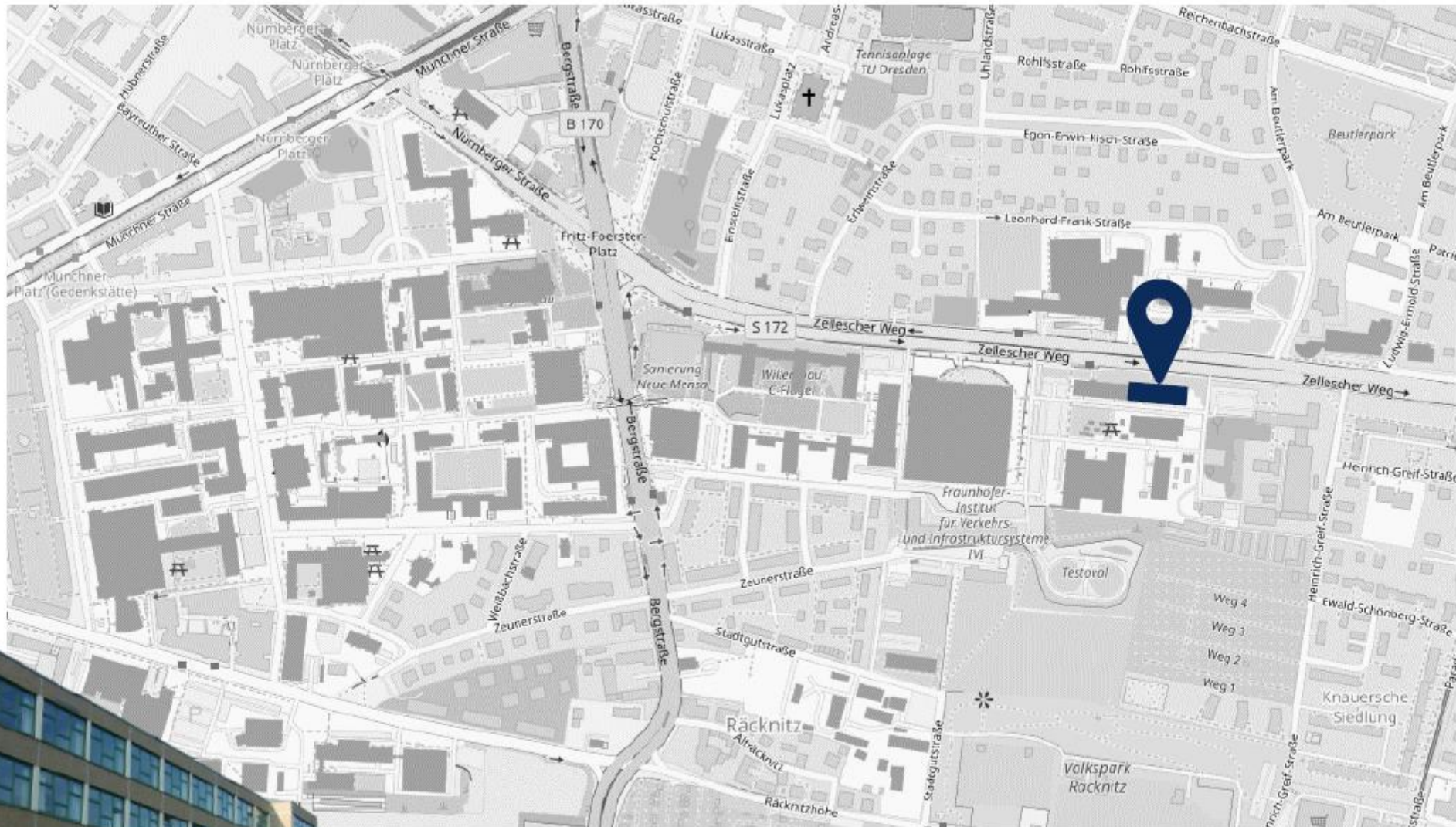
Portuguese

Czech

Participation in a Language Course

- **Credit points for the course** (with passed exam):
modules (see your examination regulations)
or
as additional or elective coursework (see your examination
or AQUA regulations)
- In preparation for a **semester abroad**
(Contact the International Office, Erasmus Coordinator)

Location



Seminargebäude 1, Zellescher Weg 22

Levels and Course Types

Courses	
A1 – A2+	Without prior knowledge or based on little prior knowledge
B1 – B1+	Building on the elementary use of language
B2+ - C1 EBW (F)	Introduction to professional and scientific language
B1 – C1+ Profile courses	Profile courses – Specialized topics

Specialization Studies

Ostasienzentrum (OAZ)



- Eastern Asia | Japan
- Eastern Asia | Greater China

Each contains:

12 SWS of language training

8 SWS regional studies (e.g. politics)

Regional Studies: Latin America

- Latin America | Hispanic America
- Latin America | Brasil

B2 Portuguese or C1 Spanish +
regional studies (e.g. politics)

Registration



Registration always
with **OPAL** starting in
April/October

In WiSe 23/24 from
01.10.2023

Classes begin **16.10.2023**

Exams

Exam dates published in the course
description in

OPAL

**at the latest 8 weeks after course start
(usually much sooner)**



Registration for exams via **Selma**

In WiSe in weeks 2-3 (January)

In SoSe in weeks 25-27 (June/July)

Certificates



Participation Certificates

UNlcert Basis, I, II, III

TU-Zertifikat B2+ or C1

APE / ABE Certificate or Diploma

Latin / Ancient Greek knowledge

Preparation for Latinum / Graecum exams

Certificate

Advanced Professional English

		«Vorname» «Mittelname» «Name» «GebDatum» «GebOrt» «GESStds» h («GESStds» SWS)
TU-Zertifikat <u>TU-Certificate</u>		Grade «Note1» Grade «Note2» Grade «Note3»
«Sprache» Niveau B2+ «Language» Level B2+		
Einführung in die Berufs- und Wissenschaftssprache Introduction into Business «Language» and «Language» for Specific Purposes		
«Titel»	«Vorname» «Name»	
Geburtsdatum Date of Birth	«GebDatum»	
Geburtsort Place of Birth	«GebOrt»	Examination Board
Kursinhalt Topics	- Arbeit mit fach- und wissenschaftsbezogenen Texten / scientific Reading and Writing - mündliche und schriftliche Kommunikation / oral and written Communication - Bewerbungstraining / Job Application Training	
Umfang workload	6 SWS (90 Std.)	
Schriftlich / written	Note / Grade	Mündlich / Oral
Klausur (Lesen+Hören) Exam (Listening+Reading)	«KLH»	Mündliche Prüfung Oral Production
Klausur (Schreiben) Exam (Writing)	«Schr»	Referat Presentation
Gesamtnote Total Result	«EndNote» («Prädikat»)	
Dresden, 31.03.2023		
Sprachlehrer/in Course Lecturer		
Das TU-Zertifikat ist ein Dokument, das die Teilnahme an der Sprachkurse für B2+ bestätigt. Das TU-Zertifikat ist ein Dokument, das die Teilnahme an der Sprachkurse für B2+ bestätigt. Das TU-Zertifikat ist ein Dokument, das die Teilnahme an der Sprachkurse für B2+ bestätigt.		

Contact

 TUDIAS Studienorganisation

 sprachen.zentrum@tu-dresden.de



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- TUDIAS Language Programme
- German Physics Society - students and young researchers
- Information and Support by the Student Council



- **jDPG:** Netzwerk junger, physik-begeisterter Menschen in Deutschland
- **Veranstaltungen:** Exkursionen, Vernetzung, Berufsvorbereitung u.a.
- **Zum Kennenlernen:** Dresdner Abiturpreis- und Neumitgliedertreffen am 25. Oktober am Institut für Angewandte Physik (IAP)
(weitere Infos und Anmeldung: dresden.jdpg.de / QR-Code ↓)



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Fachschaftsrat
Physik

October 6, 2023

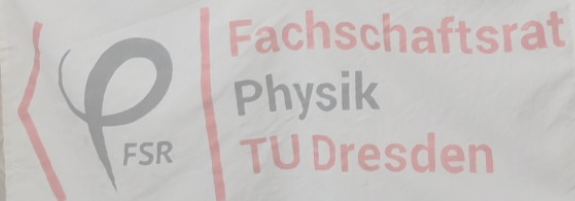
Student council of physics



 **Fachschaftsrat**
Physik
TU Dresden

Your #1 contact

If you don't know where to go and who to ask -
we are here and offer first aid!



pfsr.de

Instagram: [@pfsr_tud](https://www.instagram.com/pfsr_tud)

Telegram: t.me/pfsrinfo

fsrphysik@mailbox.tu-dresden.de

Büro: REC/D017



Everyone can join!

- We meet each Monday at 7 pm (19:00)
- Where? REC/D016 and online via BBB (but please join in person!)
- First meeting will be on October 9 in REC/C213
- More infos: pfsr.de



Our official duties

- Evaluating classes
- Improving the curricula
- Being contact persons for students
- Representing you in several official bodies
 - University student council (StuRa)
 - Committee for the physics curriculum
 - Examination commissions



First semester introduction

Summer BBQ

Live-Music Evening

Feuerzangenbowle

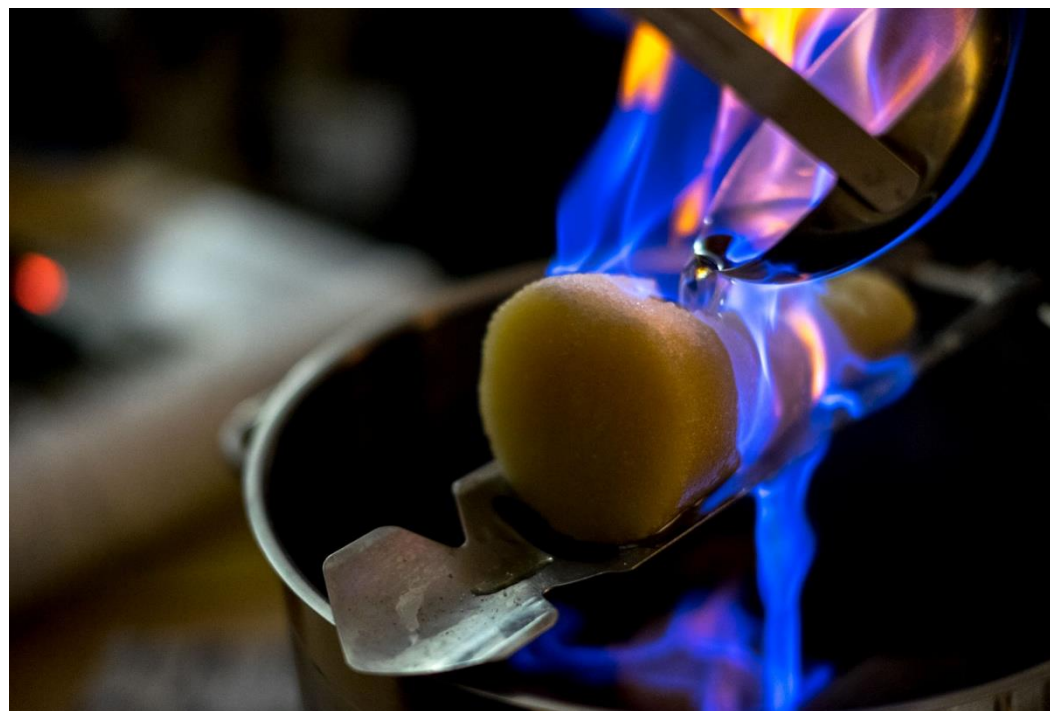
HZDR trip

CERN trip

SPÆM

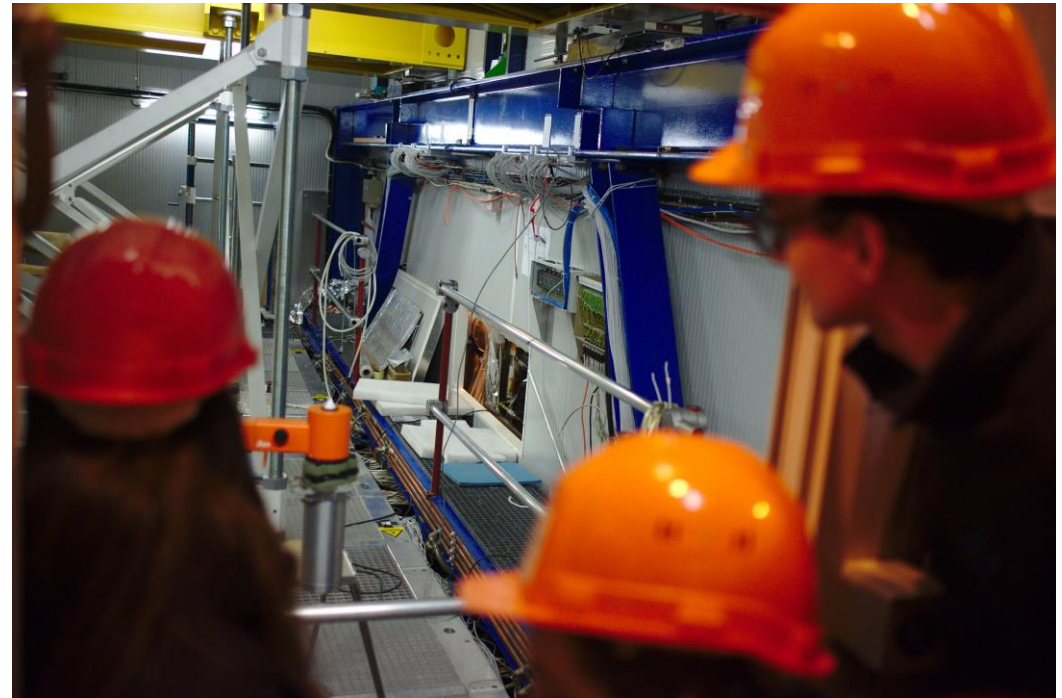


Feuerzangenbowle



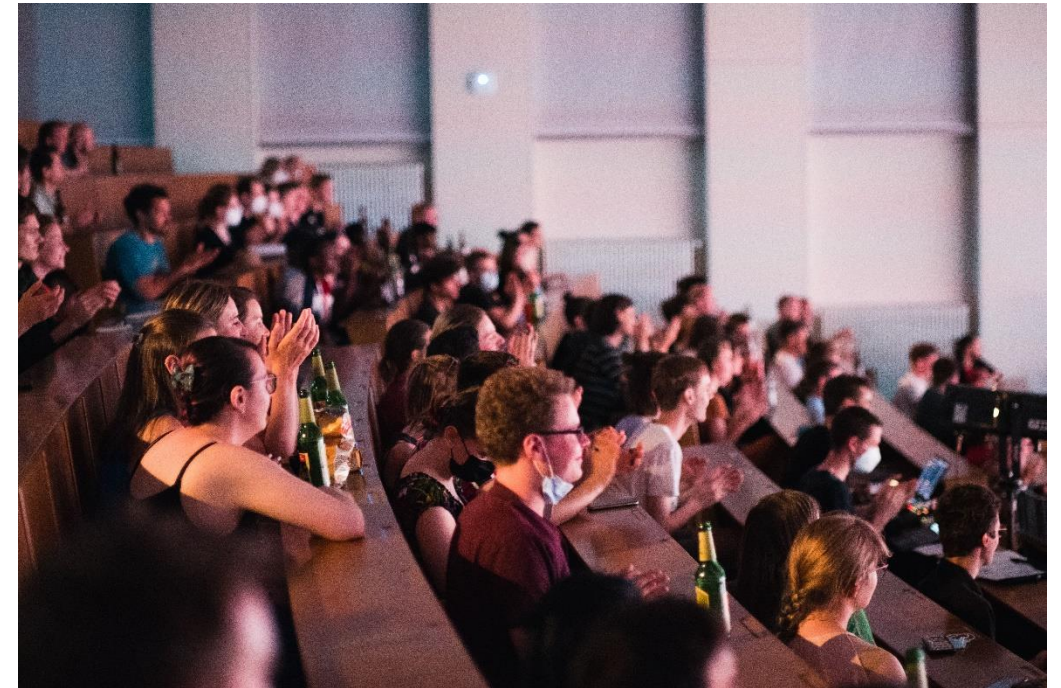


CERN trip



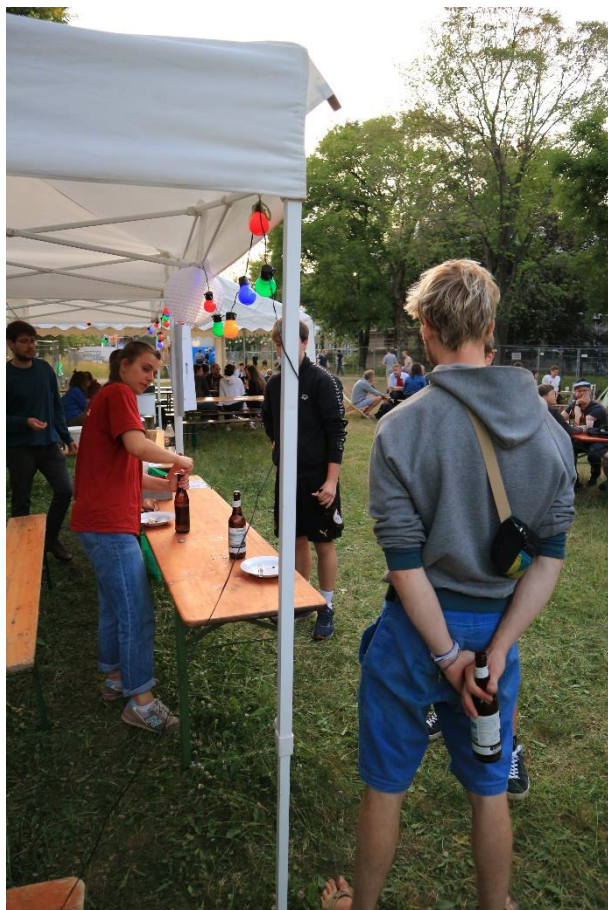


Live-Music evening





Summer BBQ





Our office – REC/D017





Kuschelecke – REC/D108





What's next?





„Lernraum Physik“ (Studyroom)

- Students supporting students
- Get help with your exercise sheets, studying and life in DD
- <https://tu-dresden.de/mn/physik/studium/beratung-und-service/lernraum>



Private problems or questions in general?

- Problems with lecturers
- Administrative problems
- Question about Disadvantages, ...

⇒ contact us!

stugako-physik-ma@mailbox.tu-dresden.de (student coordinator of studies)

fsrphysik@mailbox.tu-dresden.de (student council)



General advice

- Check your mails! (msx.tu-dresden.de)
- Organize in study groups
- Register for a library account
- Might need EC card for paying cashless (no credit cards...)
- Sports program (enrolment starts October 11)
- Language program (free! Enrolment already started)
- International buddies / Erasmus student network
- Don't hesitate to write mails to professors/lecturers
- Don't forget to register for main seminar and lab courses



Upcoming events

- First semester Hike
(Saturday October 7 at 9:30 am; track 14 – main station)
- Join us on 11th October for the Masters BBQ
(5 p.m., at the student club HängeMathe, Zeunerstraße 1f)
- FLINTA* physicist breakfast on October 23 and November 9
- Feuerzangenbowle on December 8



Questions?



Enjoy your Master of Physics studies in Dresden!



— Slides will be uploaded to: <https://tu-dresden.de/mn/physik/studium/Studienstart>