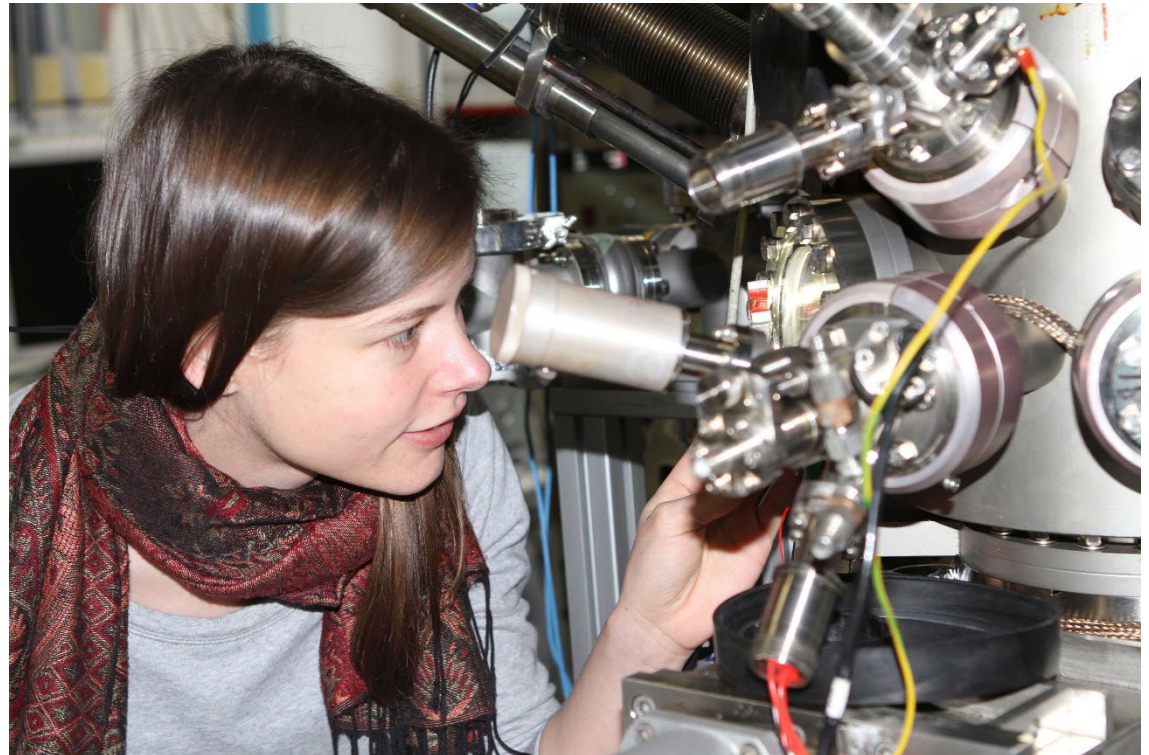


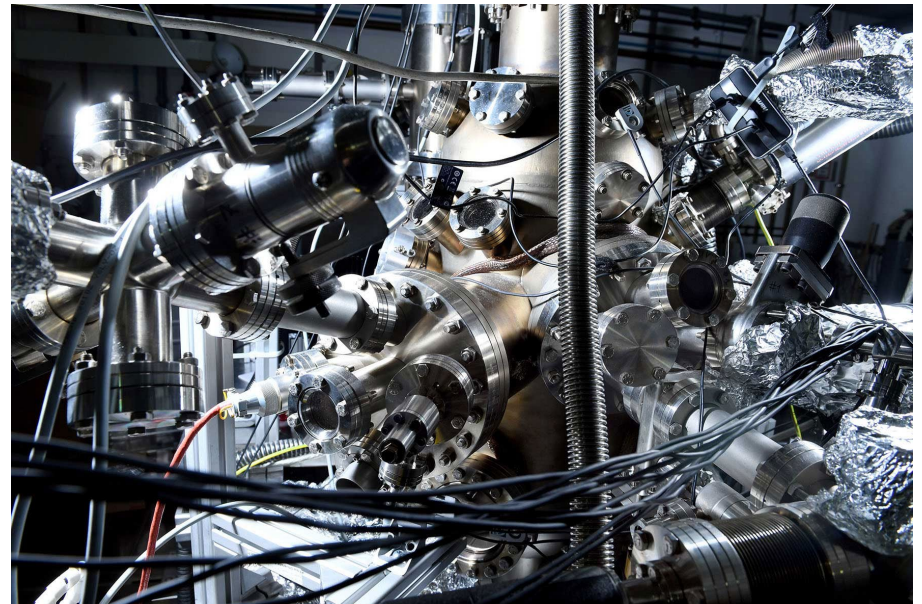
Master of Science in Physics

Graduate program for international careers in research



Outline

- University & Department
- Master of Science & French-German Double Degree Master's Program
- Dates & Contacts



About Freie Universität Berlin

- public university
- no tuition fees
- excellent research

75 Years
of Free Thinking.



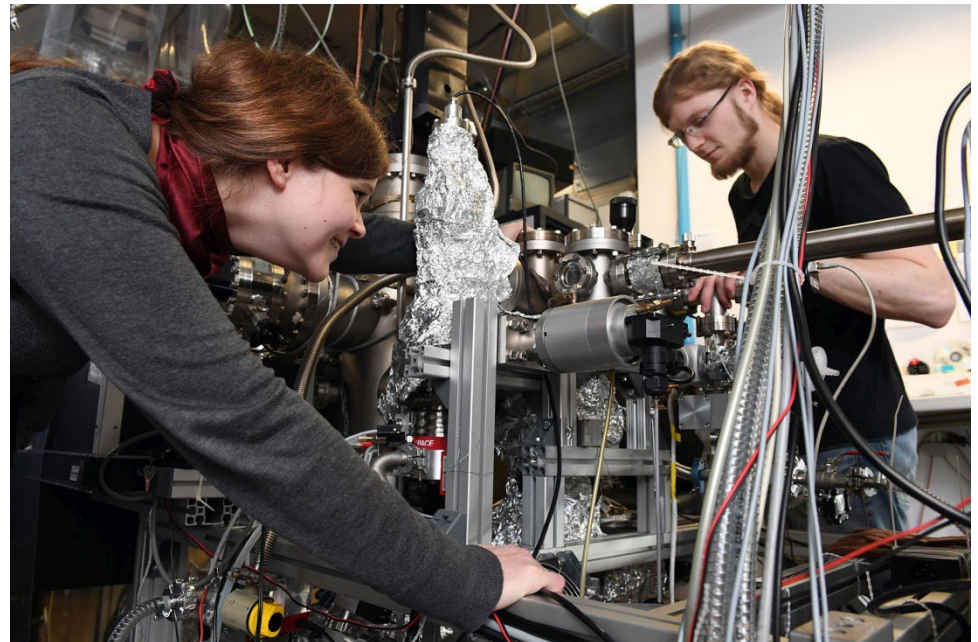
About Department of Physics

- 75 years of expertise
- 30 research groups
- 220 master students, 70% from abroad



Masters Program

- English only
- 4 semesters
- research-oriented



Requirements

- at least B2 English language proficiency
- no GPA
- equivalent Bachelor of Science in Physics



Program Structure

Advanced Phase

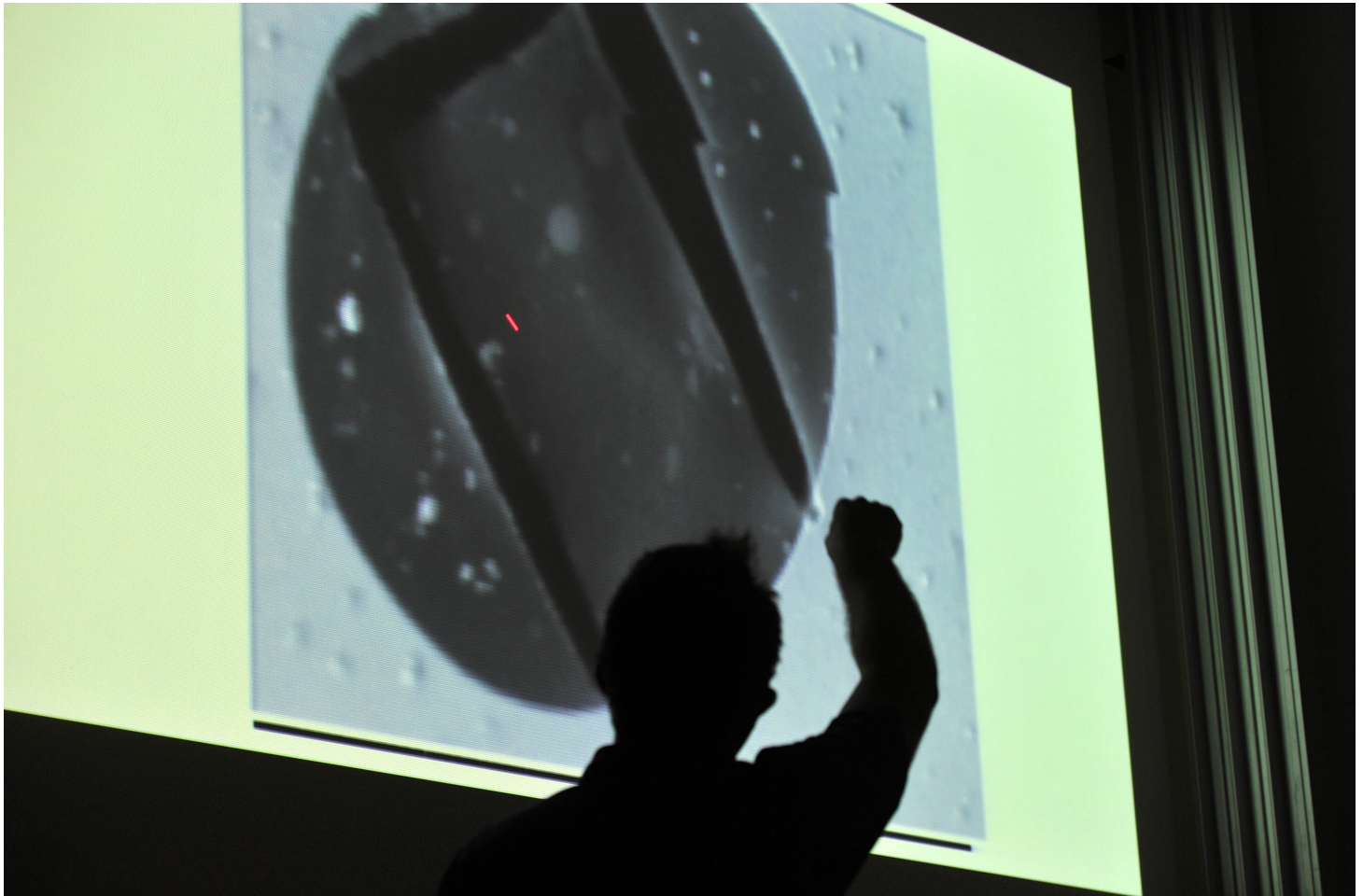
- 2 semesters
- lab courses
- seminars



Research Phase

- 2 semesters
- join a research group
- master thesis

Lectures



Seminars



Lab Courses



Lab Courses

Some examples for experiments:

- Pulsed Nuclear Magnetic Resonance (NMR)
- Photoelectron spectroscopy (PES)
- Raman Scattering



Recommended schedule

2.1. Sample programme plan for the Master's degree programme in Physics

The modules of the first and second semesters may be taken in any order. Students are recommended to divide the work load evenly between the two semesters.

1st semester 30 CP	2nd semester 30 CP	3rd semester 30 CP	4th semester 30 CP
Advanced phase		Research phase	
Compulsory module Advanced Laboratory Course for Master Students (10 CP)	Compulsory module Selected Topics in Physics (5 CP)	Compulsory module Scientific Specialisation (15 CP)	Master's thesis with accompanying seminar (30 CP)
Compulsory elective area 20 CP (at least one module from Theoretical Physics 10 CP)		Compulsory module Methodology and Project Planning (15 CP)	
Elective area 10 CP	Elective area 15 CP		

Study Regulations

www.physik.fu-berlin.de/master

DEPARTMENT OF PHYSICS
STUDY RESEARCH DEPARTMENT SERVICES NEWS

Homepage > Study > Master of Science

Master in Physics

- Degree - Master of Science (M. Sc.)
- Research-oriented
- Following on the Bachelor
- Provides entry into doctoral programs
- Duration - 4 semesters
- Language - English
- Beginning - winter and summer semester
- No tuition fees

Students acquire specialized knowledge in diverse fields of physics, deepen their understanding of scientific methods and strengthen their expertise in theoretical and experimental physics.

Excellent research community

- As a master student, you will be a part of the cutting-edge research at our university.
- You will receive individual support from instructors and professors.
- You will benefit from our well-equipped laboratories and international networks.

Requirements

- Bachelor of Science in Physics or similar degree*
- Certified English language proficiency at level B2 or higher

* Your bachelor's degree must be equivalent to the bachelor's degree in physics of the Freie Universität Berlin

[Apply for Master's Program](#)

Physics Master's Program — Unleash a Scientist Inside of You

If you admire the complexity of things and strive for new cognitive challenges every day, then you will find your passion in our program. We offer you a unique opportunity to explore the frontiers of quantum information, and many others.

Program Goals

The English-only coursework prepares students for careers in international teams and interdisciplinary projects in research and development.

What expertise do the graduates acquire?

Our master's students acquire universally valuable skills such as understanding of complex structures, analytical proficiency, and reasoning. They learn to manage problems in a wide variety of fields of natural science and technology and become flexible and highly desired professionals on the job market.

Program Structure

To complete the Master's program, a student has to collect 120 credit points (CPs). We suggest taking about 30 CPs each semester.

[Expand all](#)

- Advanced phase – First year
- Research phase – Second year
- Recommended Schedule
- Big Plus: German-French Double Master in Physics

French-German Double Degree Program

Institut Polytechnique de Paris + Freie Universität Berlin

[Double Degree Program in Physics](#)

Events

These events might be interesting for you.

- Research groups present themselves
- Pathways in Physics
- Physics Colloquium

DOCUMENTS AND LINKS

Please note that only German versions are legally binding.

- Study regulations for the Master's Programme in Physics - English, 2020
- Access Statute - German, Zugangssatzung, 2022
- List of non-physics courses in elective area - English
- Study Plan during your Master's: first year
- Form Research phase registration - English, please print double-sided
- Form Exam "Scientific Specialization" - German
- Recommendations: Good scientific practice for reports and theses
- Scientific Integrity
- Flyer Masters' Program in Physics

COURSE LINKS

- Course Catalog
- Blackboard
- My Campus & Whiteboard
- Preparatory Course to the Advanced Master Lab
- Advanced Laboratory Course for Master Students

SUPPORT

- Questions?
- Coordinator of the Master's Program
- Mentoring
- Advising for international students
- Support by Students' Union FSU
- FAQ

Study Regulations

1. Compulsory area

Module: Advanced Laboratory Course for Master Students			
University/Department/Teaching Unit: Freie Universität Berlin/Physics/Physics			
Responsible for the module: Module lecturers			
Admission requirements: none			
Qualification aims: The students have mastered more complex issues in physics. They are familiar with and can apply the more advanced experimental methods used in current physics research to solve these issues. They are able to master a new field of work in a short time from current specialist literature and to communicate it comprehensibly in presentations.			
Content: Study of literature as introduction to a new field; close study of physics issues, modern experimental methods and measurement technologies; documentation of experimental process; critical evaluation and discussion of findings; written presentation of issues, evaluation and findings; presentation and explanation of experimental methods, their possibilities and limitations. Topic fields: solid state physics (magnetism, surface physics, superconductivity), atomic and molecular physics, nuclear physics, biophysics.			
Teaching and learning units	Compulsory attendance (Semester hours per week = SH)	Forms of active participation	Study time (hours)
Practical	6	Carrying out and documenting practical experiments	Attendance at practical (P) Practical (P) preparation and follow-up 90 150
Seminar	2	Lecture of approx. 20 minutes, participation in discussion	Attendance at seminar (S) Seminar (S) preparation and follow-up 30 30
Module examination		none	
Module language		English (or German)	
Compulsory regular attendance		Yes	
Study time, total hours		300 hours	10 CP
Duration of module		One semester	
Module offered		Every semester	
Application		Master's degree programme in Physics	

DOCUMENTS AND LINKS

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- [Study regulations for the Master's Programme in Physics - English, 2020](#)
- Study regulations for the Master's Programme in Physics - English, 2013
- Access Statute - German, Zugangssatzung, 2012
- List of additional modules for the elective part - German
- List of non-physics courses in elective area - English
- Form Research phase registration - English, please print double-sided
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Research Focus

DEPARTMENT OF PHYSICS

STUDY

RESEARCH

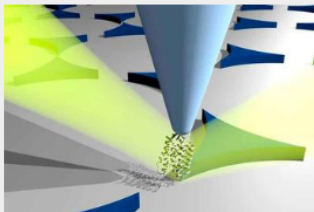
DEPARTMENT

SERVICES

Homepage > Research

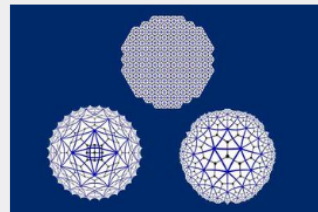
Fundamental Physics Research

The department traditionally focuses on basic research in experimental and theoretical physics. In physics education, we develop innovative concepts and methods for teaching Physics.



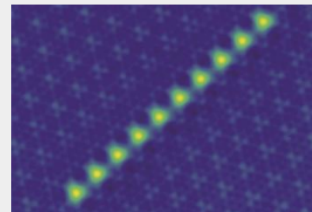
Biophysics

We describe physical processes within biological systems and uncover functions of biological macromolecules.



Quantum Physics

We study the laws of nature at the atomic and subatomic level and research on complex quantum systems.



Nanophysics and Surface Science

We analyze properties that materials exhibit at a structural size of a few nanometers and create new composite materials.



Ultrafast Physics

We use femtosecond laser pulses with wavelengths ranging from the terahertz to the x-ray regime to research extremely fast processes in magnetic materials and biological molecules.



Image Credit: Andrea Grützner

Research Focus

www.physik.fu-berlin.de/research



Research Group Bolotin

› Quantum nanoelectronics of 2D materials



Research Group Kuch

› Spectroscopy and spectromicroscopy of new magnetic materials



Research Group Dau

› Biophysics and Photosynthesis



Research Group Reissig

› Molecular Biophysics with focus on Photonic Materials



Research Group Elsaesser

› Experimental Biophysics and Space Sciences



Research Group Reich

› Physics of Nanostructures



Research Group Franke

› Experimental Nanophysics



Research Group Schlesinger

› Genetic Biophysics



Research Group Fumagalli

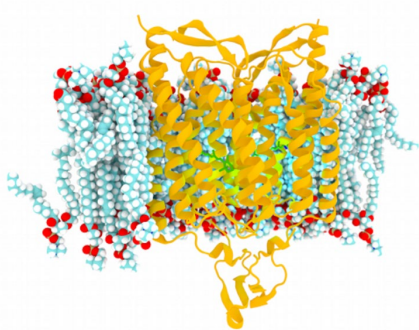
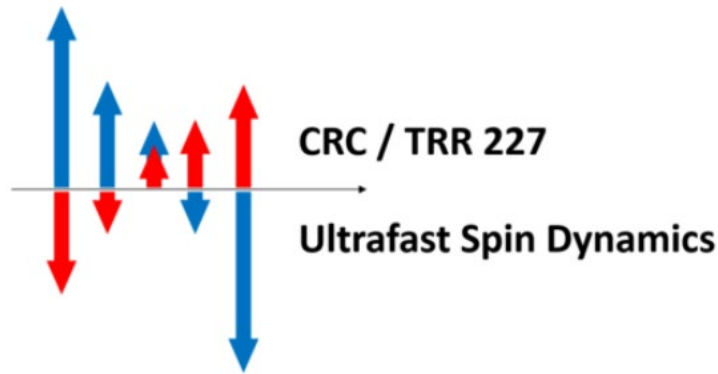
› Thin Films - Near-field Optical Microscopy



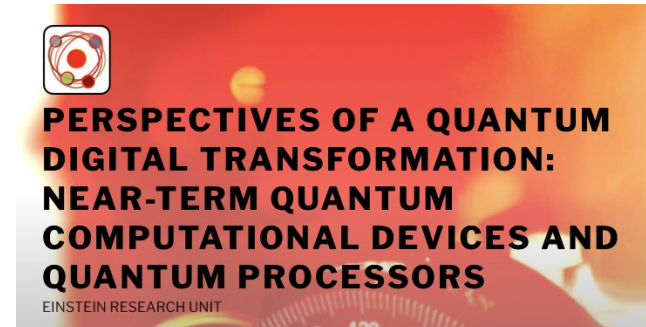
Research Group Weinelt

› Ultrafast Surface Dynamics

Collaborative Research Centers



SFB 1078
Protonation Dynamics in Protein Function



Scientific Network

Adjunct Professors

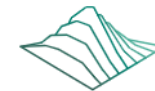
- Dr. Silke Christiansen, Adjunct Professor, Fraunhofer IKTS
- Dr. Klaus Lips, Adjunct Professor, HZB
- Dr. Marc Vrakking, Adjunct Professor, MBI
- Dr. Beatriz Roldan Cuenya, Adjunct Professor, FHI / MPG
- Dr. Hans-Joachim Freund, Adjunct Professor, FHI / MPG
- Dr. Gerard Meijer, Adjunct Professor, FHI / MPG
- Dr. Heinz-Eberhard Mahnke, Adjunct Professor, HZB
- Dr. Jürgen Renn, Adjunct Professor, MPG
- Dr. Matthias Scheffler, Adjunct Professor, FHI / MPG
- Dr. Martin Wolf, Adjunct Professor, FHI / MPG
- Dr. Michael Giersig, Adjunct Professor
- Dr. Dirk Manske, Adjunct Professor, MPI



Fraunhofer Institute for Ceramic Technologies
and Systems IKTS



MAX BORN INSTITUTE
for Nonlinear Optics and Short Pulse Spectroscopy



FRITZ-HABER-INSTITUT
MAX-PLANCK-GESELLSCHAFT



MAX PLANCK INSTITUTE
FOR SOLID STATE RESEARCH

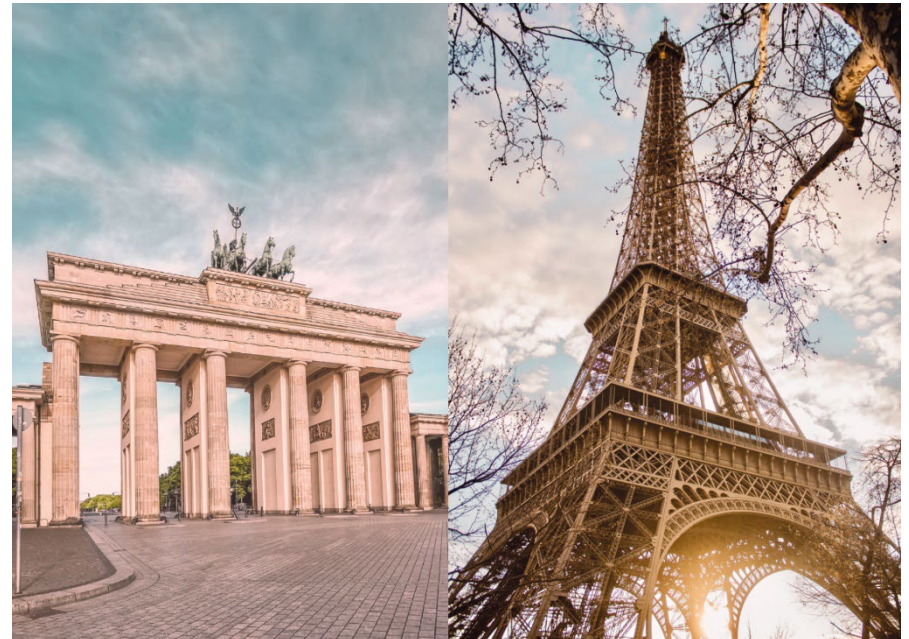
BESSY II - Electron Storage Ring

Measuring times blocked for Freie Universität



French-German Master's Double Degree

- French-German program
- Institut Polytechnique de Paris + Freie Universität



French-German Master's Double Degree

1st year

Berlin

60 ECTS

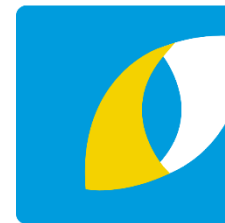
2nd year

Paris

60 ECTS

French-German Master's Double Degree

- mandatory enrollment as FU student
- program in English
- German and French at least A2 GeR
- double application (Freie Universität and IP)



Université
franco-allemande
Deutsch-Französische
Hochschule

Application

www.physik.fu-berlin.de/master

DEPARTMENT OF PHYSICS

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Homepage > Study > Master of Science

Master in Physics

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[Apply for Master's Program](#)

Graduate in Physics



Prof. Dr. Katharina Franke and Prof. Dr. Joachim Heberle

Physics Master's Program — Unleash a Scientist Inside of You

If you admire the complexity of things and strive for new cognitive challenges every day, then you will fit right into our community. Our students and graduates have curiosity in their blood and the perpetual question "Why?" in their minds. The research topics inside the department include quantum computing, nanoscience, biological nanomachines, quantum information, and many others.

Application Period

Summer semester 2024 01.12.2023 - 15.02.2024

Winter semester 2024/25 15.04.2024 - 15.08.2024

Hurry up!

- 6 weeks in advance
- transcript of 2/3 of records

 assist

French-German Master's Double Degree

Deadline:

- June 30
- March 10 if combined with Erasmus application

Early application:

- average grade in the 1st Master semester is at least 2.0

Student advisory

Leo

studienberatung@physik.fu-berlin.de

Friday 1-2 pm

online counselling available!



Master's Program Coordinator

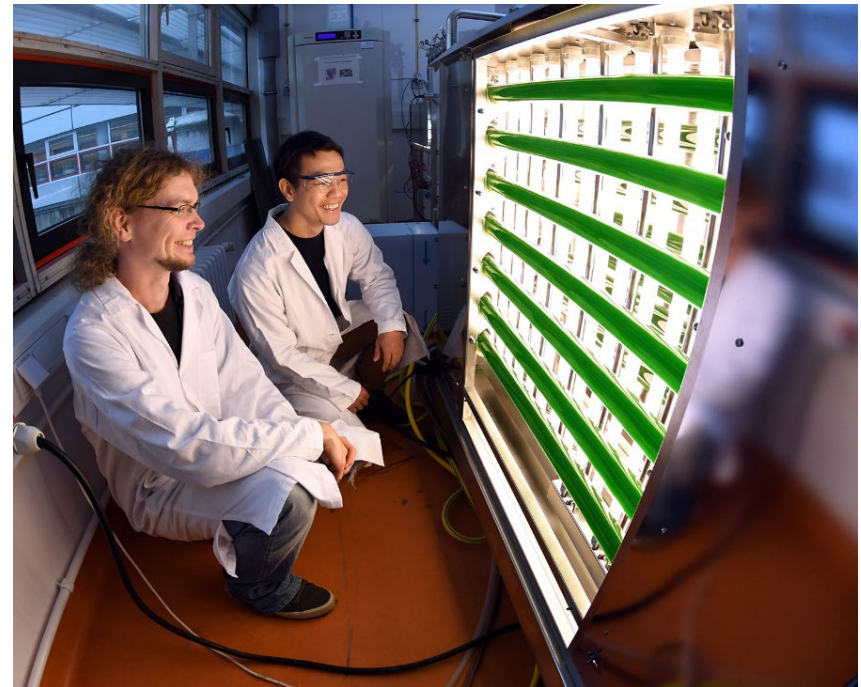
Prof. Dr. Kirill Bolotin

masterstudium@physik.fu-berlin.de



Working side by side with scientists

- qualifying for international scientific career
- encouraging and supportive
- freedom
- learn German for free



Postgraduate Program

www.physik.fu-berlin.de/phd-physics

DEPARTMENT OF PHYSICS

STUDY
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SERVICES

[Homepage](#) > [Study](#) > [PhD in Physics](#)

Doctorate Studies in Physics

PhD in Physics

- Degree - Dr. rer. nat
- Qualification for an in-depth scientific work
- Duration - approx. 4 years
- Language - German or English
- Beginning - at any time

Excellent international research community


- supportive and trusted working atmosphere
- cooperation with national and international research institutions
- measuring times at the synchrotron BESSY II reserved for Freie Universität
- additional qualification at the [DRS](#) possible


Requirements

- Degree as Master of Science or Diploma
- You have already found an open doctoral position in one of our research groups.

[Our research](#)

Doctoral Program at Freie Universität





Campus Life

- sports
- parties



Living in Berlin

Start looking for a flat in advance!



Be a part of our physics crew!

