

# DR. RER. NAT. RUTH SCHÄFER

## EDUCATION\*

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OCT '19 – OCT '22	Ruprecht-Karls-Universität Heidelberg, Germany Fellowship of the German Research Foundation (DFG) in the Research Training Group “Particle Physics Beyond the Standard Model” (GRK1940) Heidelberg Graduate School for Physics, Institute for Theoretical Physics DEGREE: <b>Ph.D. in Physics</b> THESIS: <i>New Physics Searches in Flavour Observables</i> ADVISOR: Jun.-Prof. Dr. Susanne Westhoff
OCT '17 – SEP '19	Ruprecht-Karls-Universität Heidelberg, Germany DEGREE: <b>Master of Science: Physics</b> THESIS: <i>Searching for light dark sectors in rare meson decays</i> THESIS ADVISOR: Jun.-Prof. Dr. Susanne Westhoff THESIS GRADE: 1.0* (A+)
APR '14 – SEP '17	Westfälische Wilhelms-Universität Münster, Germany DEGREE: <b>Bachelor of Science: Physics</b> THESIS: <i>The colour evolution of <math>q\bar{q}g</math> and <math>Q\bar{Q}g</math> production in the quark channel</i> THESIS ADVISOR: Prof. Dr. Anna Kulesza THESIS GRADE: 1.0* (A+)
OCT '13 – SEP '16	Westfälische Wilhelms-Universität Münster, Germany DEGREE: <b>Bachelor of Science: Computer Science/Informatics</b> THESIS: <i>Studying graph isomorphisms using Umeyama’s algorithm: Error analysis</i> THESIS ADVISOR: Prof. Dr. Xiaoyi Jiang THESIS GRADE: 1.3* (A)
UNTIL JUL '13	School in Kleve, Germany DEGREE: <b>Abitur</b> FINAL GRADE: 1.3* (A)

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\***Grading scale:** 1.0-1.5=*sehr gut* (excellent); 1.6-2.5=*gut* (good); 2.6-3.5=*befriedigend* (satisfactory); 3.6-4.0= *ausreichend* (pass)

## PUBLICATIONS

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- JUNE '23 | *Top Secrets: long-lived ALPs in top production*  
Lovisa Rygaard, Jeremi Niedziela, Ruth Schäfer, Sebastian Bruggisser, Juliette Alimena, Susanne Westhoff, Freya Blekman  
*JHEP 10 (2023) 138, arXiv:2306.08686*
- MAY '22 | *The International Linear Collider: Report to Snowmass 2021*  
Alexander Aryshev, et al.  
*Snowmass2021, arXiv:2203.07622*
- FEB '22 | *Near or Far Detectors? Optimising Long-Lived Particle Searches at Electron-Positron Colliders*  
Ruth Schäfer, Finn Tillinger, Susanne Westhoff  
*Phys.Rev.D 107 (2023) 7, 076022, arXiv:2202.11714*
- JAN '22 | *Displaced or Invisible? ALPs from B decays at Belle II*  
Torben Ferber, Anastasiia Filimonova, Ruth Schäfer, Susanne Westhoff  
*JHEP 04 (2023) 131, arXiv:2201.06580*
- MAY '21 | *Unleashing the full power of LHCb to probe Stealth New Physics*  
Martino Borsato, et al.  
*Rept.Prog.Phys. 85 (2022) 2, 024201, arXiv:2105.12668*
- MAY '21 | *Physics reach of a long-lived particle detector at Belle II*  
Sascha Dreyer, et al.  
*Snowmass2021, arXiv:2105.12962*
- JAN '21 | *The flavor of UV physics*  
Sebastian Bruggisser, Ruth Schäfer, Susanne Westhoff, Danny van Dyk  
*JHEP 05 (2021) 257, arXiv:2101.07273*
- NOV '19 | *Probing Dark sectors with long-lived particles at Belle II*  
Anastasiia Filimonova, Ruth Schäfer, Susanne Westhoff  
*Phys.Rev.D 101 (2020) 9, 095006, arXiv:1911.03490*

## CONFERENCE AND SEMINAR TALKS

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- JUN '22 | *A short introduction to long-lived particles*  
**Dark Pollica**, Pollica, Italy
- JUN '22 | *Displaced or Invisible? ALPs from B decays at Belle II*  
**Searching for long-lived particles at the LHC and beyond: Eleventh workshop of the LLP Community**, CERN (virtual)

- MAY '22 *Near or Far Detectors? Optimising Long-Lived Particle Searches at Electron-Positron Colliders*  
**ECFA HF WG1: 1st Workshop of the WG1-SRCH group**  
 CERN (virtual)
- DEC '21 *Long-lived particle searches at Belle II*  
**Belle II group seminar**  
 Karlsruhe Institute of Technology, Karlsruhe, Germany
- NOV '21 *Displaced or Invisible? ALPs from B decays at Belle II*  
**Searching for long-lived particles at the LHC and beyond: Tenth workshop of the LLP Community, CERN (virtual)**
- NOV '21 *Displaced and Invisible Signatures of ALPs at Belle II*  
**Brookhaven Forum 2021: Opening New Windows to the Universe**  
 Brookhaven National Laboratory, Upton, NY, USA (virtual)
- SEP '21 *GAZELLE, a long-baseline detector for Belle II*  
**Bright ideas for a dark universe**  
 DESY, Hamburg, Germany (virtual)
- AUG '21 *Long-lived particles at colliders*  
**Dark Matter from the Laboratory to the Cosmos**  
 Aspen Center for Physics, CO, USA
- MAY '21 *GAZELLE - a new long-lived particle detector at Belle II?*  
**Searching for long-lived particles at the LHC and beyond: 9th workshop of the LLP community, CERN (virtual)**
- MAY '21 *GAZELLE - a long-lived particle detector at Belle II?*  
**Phenomenology 2021 Symposium, Pittsburgh, PA, USA (virtual)**
- FEB '20 *Probing dark sectors with long-lived particles at Belle II*  
**STEALTH Physics at LHCb, Santiago de Compostela, Spain**
- NOV '19 *Probing dark sectors with long-lived particles at Belle II*  
**Searching for long-lived particles at the LHC, Ghent, Belgium**
- NOV '19 *Long-lived scalars in rare meson decays*  
**Particle phenomenology group seminar**  
 Institute of Theoretical Physics, Heidelberg University, Germany
- OCT '19 *Long-lived scalars in rare meson decays*  
**2nd Open Belle II Physics Week, KEK, Tsukuba, Japan**

## WORKSHOP AND SUMMER SCHOOL PARTICIPATION

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JUN '22	<b>Dark Pollica</b> , Pollica, Italy
JUL '21	<b>Aspen Center for Physics Summer Program</b> <i>Dark Matter from the Laboratory to the Cosmos</i> Aspen, CO, USA
JUN '20	<b>Theoretical Advanced Study Institute in Elementary Particle Physics (TASI)</b> , <i>The Obscure Universe: Neutrinos and Other Dark Matters</i> University of Colorado, Boulder, CO, USA (virtual)
JUN '19	<b>Summer School on Particle Physics</b> , Abdus Salam ICTP, Trieste, Italy
JUL – SEP '16	<b>International Summer Student Program</b> , GSI, Darmstadt, Germany working on the <i>Characterisation of a Quadrupole Mass Spectrometer</i>

## TEACHING EXPERIENCE

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WINTER TERM '21	Supervision of a Bachelor student's thesis work
WINTER TERM '21	Lecture "Long-lived particles" 3 lectures of 1.5h each to 20 graduate students
WINTER TERM '20	Tutorial "Theoretical Physics I: Mechanics" Weekly virtual class of 20 Bachelor students, including grading homework
SUMMER TERM '20	Lecture notes preparation (300 p.) on Quantum Mechanics Including translation from English to German
WINTER TERM '19	Tutorial "Theoretical Physics I: Mechanics" Weekly in-person class with 20 Bachelor students, including grading exams