



With more than 6,300 employees in research, teaching and administration and its unique profile, TU Dortmund University shapes prospects for the future: The cooperation between engineering and natural sciences as well as social and cultural studies promotes both technological innovations and progress in knowledge and methodology. And it is not only the more than 34,300 students who benefit from that.

## Three doctorate positions (m/f/d) in particle accelerator physics

At the TU Dortmund University, three positions for scientific employees (m/f/d) are available starting at the earliest possible date for a period of three years. These positions allow for research towards a dissertation at the Faculty of Physics.

According to public tariff regulations, the salary is based on tariff group E13 TV-L with 50% of the regular work time. An increase to 75 % within the employment period is intended.

Research in the field of accelerator physics will take place at the Center for Synchrotron Radiation which operates the 1.5 GeV electron storage ring DELTA as a synchrotron light source and for accelerator science studies. With excellent instrumentation and a large fraction of beam time dedicated to accelerator physics, the storage ring offers ample experimental opportunities to study beam dynamics and beam diagnostics as well as the interaction between relativistic electrons and laser radiation, which includes methods like Coherent Harmonic Generation (CHG) and Compton backscattering. Furthermore, the first implementation of the seeding scheme Echo Enabled Harmonic Generation (EEHG) at a storage ring is planned in order to generate ultrashort radiation pulses in the extreme ultraviolet regime.

### YOUR RESEARCH TOPICS:

- Simulations and experimental studies related to beam dynamics in storage rings (e.g., resonant phase space islands, isochronous magnetic lattices), or
- Contributions to the implementation of EEHG at DELTA and work towards EEHG applications at future diffraction-limited storage rings, or
- Research in coherent emission of terahertz radiation via laser-electron interaction and application of novel diagnostics methods, e.g., electro-optical techniques.

In addition, the positions may involve the preparation and conduction of courses (2 hours/week) as well as the supervision of students.

### YOUR PROFILE:

- Master-level university degree in physics or a closely related discipline (e.g., electrical engineering) with very good grades.
- Genuine interest in accelerator physics. Experience in this field is advantageous, particularly at synchrotron light sources or free-electron lasers.
- Motivation for interdisciplinary cooperation within a BMBF research project and with international partners.
- Very good language skills, orally and in writing, in German and/or English.

TU Dortmund University strives to increase the number of women in academic research and therefore encourages women to apply.

We explicitly note that applications of severely disabled persons are welcome.

Please send your applications including copies of the usual documents by mail until February 10th 2020 stating **reference number w87/19** to:

Prof. Dr. Shaukat Khan  
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