TECHNISCHE UNIVERSITÄT DRESDEN

Faculty of Physics

DRESDNER PROMOTIONSPREIS PHYSIK 2023

Program:
– Opening: Dean of the Faculty of Physics, Prof. Dr. Carsten Timm
– Laudations: Chair of the Prize Committee, Prof. Dr. Roland Ketzmerick
– Laureate Lectures: Dr. Stefanie Todt and Dr. Anton Kirch
– Reception (Recknagel-Bau, wing C, foyer of C213)

Time and Place: Tuesday, October 24, 2023, **2:50 pm** – hybrid event
The colloquium will be held in REC/C213.
Online participation possible:
Zoom-Meeting: Meeting-ID: 631 3817 8900 / passcode: PC-WiSe23
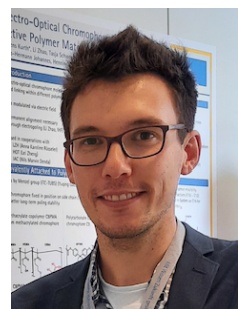https://tu-dresden.zoom-x.de/j/63138178900?pwd=am9nSzYyeUh3SWxMdnNBWkpUaXl5UT09

Lectures:

Dr. Stefanie Todt: The $W^\pm W^\pm$ Scattering Process

Scattering processes among electroweak gauge bosons are an excellent tool for study- ing the delicate interplay of the gauge structure and the electroweak symmetry breaking mechanism of the Standard Model. This thesis project examines the $W^\pm W^\pm$ scattering process, contributing to the first observation of a process containing vector boson scattering with data from the ATLAS experiment at the LHC. Presenting the first exclusion bounds of new-physics parameters of an effective field theory (EFT) approach at 13 TeV with the ATLAS experiment, this thesis laid the foundations for a multitude of new-physics analyses and combinations probing this EFT framework.

Dr. Anton Kirch: Charge-carrier dynamics in organic LEDs

Any new mobile phone today is likely to feature a screen made from organic light-emitting diodes (OLEDs). OLEDs owe their success as a display technology to their brilliant colors and high achievable resolution. As they can also be produced as large lighting panels, lamps made from OLEDs are penetrating certain markets. We can already buy them, e.g. in car rear lights, but the technology is prone to emission inhomogeneity and sudden device failures. To further explore their physical limits and application opportunities, this work investigates fundamental OLED characteristics and presents design criteria to mitigate the identified limitations.