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Project title	High-intensity coherent nonlinear optics (HICONO)
Title	Fellow's report on activities : "TU Darmstadt open day (TUDay)" for the general public (May 2017, TUDA)
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We participated on the annual open day of the TU Darmstadt, i.e. the TUDay by giving a guided lab tour and introduction to our research to high school students. For the agenda of the large event see <http://www.tu-day.de/>, from the menu select "Programm des vorangegangenen TUDays" = "Program of the previous TUDay (i.e., in May 2017), then select "Physik" from the participating departments at TUDA.

Goal : The annual TUDay aims at the general public and it is strongly advertised to students of regional high schools. The goal is to strengthen the relationship between the Technical University and the local communities, to involve the general public in the university departments and the scientific studies and research carried on therein. As a particular aim, the TUDay tries to attract high school students to study sciences or engineering, to cover the large demand of such specialists on the working market in Germany.

Impact : Several thousand visitors attend the TUDay, which covers all the numerous fields of research and study offered by TUDA, among them physics. A large fraction of the attendees are high school students. Hence, the TUDay is a large local event to communicate with the general public and advertise studies and research in physics and other fields. As ESR fellows and representatives of an European Network, we attempted to reach as many attendees as possible from the broad audience and attract them towards research related to HICONO.

Methodology : The program at the TUDay consists of many single events. First there were tours and multimedia presentations on general aspects of science studies in a technical university, including career opportunities, national and international professional prospects.

Afterwards the attendees were divided in smaller groups, which visited the single departments at TUDA and the participating research teams therein. We, jointly with two other PhD students in our laboratory, took charge of those who wanted to check out the research in physics and our team dealing with Nonlinear optics and quantum optics. For the lab tour we focussed on high-intensity laser-matter interaction, i.e., research relevant in HICONO. Such laser-based research with presentation of laser systems and optical beamlines is always attractive for the general public.

Once in the laboratory, we introduced the students to several experiments setup on the optical tables. Building experiments regarding high intensity lasers and nonlinear processes, the nature and goal of such experiments were few of the topics we presented to the students. We had lively discussions with the attendees when they asked many questions and they seemed quite interested in our research. It was a highly demanding task for us to describe our scientific projects, research goals and ongoing experiments, in simple terms (i.e., at the high school level of knowledge on physics). Nevertheless, we are confident we have succeeded well, giving the attendees the chance to experience typical optics setups used for real ongoing experiments, and using also multimedia tools in our explanations. We believe that we stimulated a “scientific spark” in the minds of the youngsters. We hope, that during the discussions we were able to transfer the basics of critical-academic thinking, and stimulate an attitude of “being hungry for knowledge” (i.e., a motivation which every beginning explorer should possess) among the high-school students. We take the many and curious questions of the attendees (though often given in an amateur and unexperienced way) as an indicator, that we achieved our goal.

The photos below show us (X. Laforgue and K. Zlatanov) in discussions with high school students during the lab tours in our group.

