Working Group "Young DPG"
Arbeitskreis junge DPG (AKjDPG)

Simon Neuhaus
neuhaus@jdpg.de

Overview of Tutorials, Invited Talks, and Sessions

(Lecture halls HS 2 Physik and HS 3 Physik)

Tutorials

AKjDPG 1.1	Mon	9:00–10:00	HS 3 Physik	**Overview talk on hadron and nuclear physics for young scientists** — •Jana N. Guenther
AKjDPG 1.2	Mon	10:00–11:00	HS 3 Physik	**Overview of nuclear astrophysics** — •Artemis Spyrou
AKjDPG 1.3	Mon	11:00–12:00	HS 3 Physik	**Massenspektrometrie und Radioaktivität: Eine Erfolgsstory!** — •Clemens Walther

Physicists Beyond Academia

AKjDPG 2.1	Tue	19:00–19:25	HS 2 Physik	**Von Teilchen zu Raketen** — •Steffen Schaepe
AKjDPG 2.2	Tue	19:25–19:50	HS 2 Physik	**Of course we can do that: Working as a data science consultant and software developer in mechanical engineering** — •Lena Linhoff
AKjDPG 2.3	Tue	19:50–20:15	HS 2 Physik	**Leaving Academia: A Failure? Or the Best Decision I Ever Made?** — •Edoardo Mornacchi

Sessions

AKjDPG 1.1–1.3	Mon	9:00–12:00	HS 3 Physik	**jDPG Tutorials**
AKjDPG 2.1–2.3	Tue	19:00–21:30	HS 2 Physik	**Physicists Beyond Academia**

AKjDPG 1: jDPG Tutorials

Time: Monday 9:00–12:00 Location: HS 3 Physik

Tutorial AKjDPG 1.1 Mon 9:00 HS 3 Physik
Overview talk on hadron and nuclear physics for young scientists — •Jana N. Guenther — University of Wuppertal, Germany

An introduction to selected topics in the fields of hadron and nuclear physics is provided, offering insights through the perspective of a researcher specializing in heavy-ion physics with lattice QCD. This overview is particularly designed for early-career scientists, including MSc and PhD students, to support their exploration of key concepts and help them to navigate the various sessions at the DGP meeting.

Tutorial AKjDPG 1.2 Mon 10:00 HS 3 Physik
Overview of nuclear astrophysics — •Artemis Spyrou — Michigan State University, East Lansing, MI, USA

This talk will serve as an introductory overview of the field of nuclear astrophysics. The field addresses questions associated with the life and death of stars, the extreme conditions found in stellar cores and the synthesis of the chemical elements we see around us. To address these questions, a multidisciplinary approach is needed, which combines astronomical observations, astrophysical models, nuclear experiment and nuclear theory. I will discuss the interplay between the different sub-disciplines and focus, in particular, on the contributions of experimental nuclear physics. How do we identify the nuclear properties that have an impact on a particular astrophysical process? How accurate should these properties be measured? What can we do if a direct measurement is not currently feasible? These and other questions will be discussed in this overview talk, preparing junior researchers for a week of an exciting immersion into current research in nuclear astrophysics (and more).

Tutorial AKjDPG 1.3 Mon 11:00 HS 3 Physik
Massenspektrometrie und Radioaktivität: Eine Erfolgsstory! — •Clemens Walther — Leibniz Universität Hannover, Institut für Radioökologie und Strahlenschutz

Was fällt einem so bei Radioaktiviät ein? Schreckliche Dinge wie Unfälle, Bomben, Ätommüll"? Oder eher positive Anwendungen in der medizinischen Diagnose und Therapie, den Materialwissenschaften, physiklaischer Grundlagenforschung und nicht zuletzt CO2 arme Stromerzeugung? In allen genannten Themen spielt Massenspektrometrie eine kaum wegzudenkende Rolle. In diesem Tutorial geht es von Spurenanalytik z.B. zur Untersuchung von Meeresströmungen, über Aufnahme von Radionukliden in Pflanzen und die Nahrung bis zur nuklearen Forensik - und alles im Rahmen aktueller Forschung!

AKjDPG 2: Physicists Beyond Academia

Time: Tuesday 19:00–21:30 Location: HS 2 Physik

Invited Talk AKjDPG 2.1 Tue 19:00 HS 2 Physik
Von Teilchen zu Raketen — •Steffen Schaepe — Deutsche Raumfahrtagentur im DLR

Die Deutsche Raumfahrtagentur im DLR nimmt für die Bundesregierung hoheitliche Aufgaben auf dem Gebiet der Raumfahrt eigenverantwortlich wahr. Dazu gehört die Durchführung eigener Missionen, die Förderung von Forschung und Entwicklung in Industrie und Wissenschaft sowie die Vertretung der Bundesrepublik in internationalen Raumfahrtgremien (ESA, EU, etc.).

Die Abteilung "Raumtransportsysteme" kümmert sich insbesondere um alle Belange, die mit Trägerraketen im weitesten Sinne zu tun haben. Insbesondere ist die Abteilung auch für die deutschen Beteiligungen an den europäischen Trägerprogrammen (Ariane, Vega, etc.) verantwortlich.

In meinem Vortrag werde ich kurz die Raumfahrtagentur vorstellen, ein Wenig zu den aktuellen Themen und Schwerpunkten im Bereich der Trägerraketen in Europa erzählen, sowie die Frage beantworten, wie und wieso ich als Teilchenphysiker in diesem Umfeld gelandet bin.

Invited Talk AKjDPG 2.2 Tue 19:25 HS 2 Physik
Of course we can do that: Working as a data science consultant and software developer in mechanical engineering — •Lena Linhoff — Point 8 GmbH, Dortmund, Germany

I studied physics at TU Dortmund, where I also got my PhD in astroparticle physics. During my PhD and postdoc, I worked mostly in the context of large experiments (MAGIC, CTA, SKA, LoFAR) in radio and gamma astronomy, focused on data analysis and software development. In 2023, I left academia for good to work on more ground-based problems. Since then, I work as data scientist and software developer at Point 8 GmbH, which was founded as a startup company in 2016 by physicists also from TU Dortmund. We are mainly engaged in the field of mechanical engineering in Germany, bringing data experience and AI knowledge into industry. I will give some insights in my daily work, what qualifies me to work on industry-related topics with a background in studying far-away galaxies, and challenges I'm confronted with in times of ChatGPT.

Invited Talk AKjDPG 2.3 Tue 19:50 HS 2 Physik
Leaving Academia: A Failure? Or the Best Decision I Ever Made? — •Edoardo Mornacchi — Swabian Instruments GmbH, Stuttgart, Germany

As physicists, we dedicate years in academia, often wondering: *What happens if I step away? Is leaving academia a failure? Should I give up physics and research for a stable job? And honestly, who's going to hire someone with my expertise in hadron physics?*

Here's the thing: leaving academia isn't a failure. There are plenty of companies doing groundbreaking, high-tech research, actively seeking skilled physicists like you. And this can be the start of something new and, for someone, even better.

In this talk, I'll share my journey from nuclear/hadron physics to my current role at Swabian Instruments, where I get to keep my love for science alive while also enjoying work outside the lab. Whether you're considering a move yourself or just curious about what's out there, I hope to provide some insights and inspiration to help you carve your own path beyond academia.

Discussion with the speakers