# AKPIK 1: RDM I: NFDI consortia (joint session AGI/AKPIK)

Time: Tuesday 11:15–12:45 Location: H1

**Invited Talk** AKPIK 1.1 Tue 11:15 H1

**Challenges in data preservation in high energy physics** — •Ulrich Schwickerath — CERN, CH-1211 Genf 23

We preserve our data to extend the scientific reach of our experiments. In high energy physics it is cost-efficient to warehouse data from completed experiments on the tape archives of our national and international laboratories. To use data archived in such a way we must also preserve our ability of use the data, specifically the documentation, computing environment and software of the experiments and analyses. Successful data preservation thus requires careful planning and ongoing effort. The contribution illustrates the challenges of long-term data preservation with experience especially from LEP, and will give a brief overview over the ongoing efforts in the LHC experiments at CERN.

**Invited Talk** AKPIK 1.2 Tue 11:45 H1

**The PUNCH4NFDI Consortium in the NFDI** — •Thomas Schörner — Deutsches Elektronen-Synchroton (DESY), Hamburg, Germany

With the "Nationale Forschungsdateninfrastruktur" (NFDI, national research data infrastructure), a massive effort is undertaken in Germany to provide a coherent research data management, to make research data sustainably utilisable and to implement the FAIR data principles.

PUNCH4NFDI is the consortium of particle, astro- and astroparticle, as well as hadron and nuclear physics within the NFDI. It aims for a FAIR future of the data management of its community and at harnessing its massive experience not least in "big data" and "open data" for the benefit of "PUNCH" sciences (Particles, Universe, NuClei and Hadrons) as well as for physics in general and the entire NFDI.

In this presentation, we will introduce the work programme of PUNCH4NFDI, its connection to everyday work in the physical sciences and beyond, and in particular the idea of digital research products and the PUNCH science data platform.

**Invited Talk** AKPIK 1.3 Tue 12:05 H1

**DAPHNE4NFDI - Daten aus Photonen und Neutronenexperimenten** — Anton Barty[1], Bridget Murphy[2], Astrid Schneidewind[3], Wiebe Lohstroh[4] und •Christian Gutt[5] — [1]DESY, Hamburg — [2]CAU Kiel — [3]FZ Jülich — [4]TU München — [5]Universität Siegen

Die Methoden der Synchrotron- und Neutronenstreuung werden in einer großen, interdisziplinären Bandbreite von Wissenschaftsfeldern angewendet. Die Nutzer repräsentieren dabei verschiedene Fachbereiche in den Naturwissenschaften, die sich dem gemeinsamen Bedarf an anspruchsvoller, schneller und tiefer Datenanalyse sowie den Herausforderungen der Implementierung eines qualifizierten Forschungsdatenmanagements gegenübersehen.

Ziel von DAPHNE4NFDI ist es, eine übergreifende Infrastruktur zu schaffen, welche die Forschungsdaten entsprechend den FAIR-Prinzipien verarbeitet. DAPHNE4NFDI bringt dazu Großforschungseinrichtungen und Nutzer/innen aus den wichtigsten Anwendungsbereichen zusammen, um das Datenmanagement im Sinne der FAIR-Kriterien voranzutreiben.

**Invited Talk** AKPIK 1.4 Tue 12:25 H1

**FAIRmat – Making Materials Data Findable and AI Ready** — Claudia Draxl[1] and •FAIRmat team[2] — [1]Institut für Physik, Humboldt-Universität zu Berlin — [2]https://www.fair-di.eu/fairmat/fairmatteam

The enormous amounts of research data produced every day in the field of condensed matter physics and the chemical physics of solids represent a gold mine of the 21st century. This gold mine is, however, of little value, if these data are not comprehensively characterized and made available. How can we refine this feedstock, i.e., turn data into knowledge and value? Here, a FAIR (Findable, Accessible, Interoperable, and Re-usable) data infrastructure plays a decisive role. Only then, data can be readily shared and explored by data analytics and artificial-intelligence (AI) methods. Making data Findable and AI Ready (a forward-looking interpretation of the acronym) will change the way how science is done today.

In this talk, we discuss how the NFDI consortium FAIRmat (https://fair-di.eu/fairmat) is approaching these goals, and how researchers can profit from our first steps already now.