



Presentation :

The PUNCH4NFDI consortium covers the German community of particle, astroparticle, nuclear, and hadron physicists.

The goal of PUNCH4NFDI is to develop and share solutions for **big data challenges** and assuring **FAIR** (Findable, Accessible, Interoperable, Reusable) data.

The main product of PUNCH4NFDI will be a **science data platform** that consist of a **data lake** with **storage and cloud computing systems**, a **data transformation layer** allowing the **analysis** of the data, and a user- friendly **interface** functioning as a **data portal**

Tasks and work packages :

TA1 : Management and governance	TA2 : Data management	TA3 : Data transformation	TA4 : Data portal	TA5 : Data irreversibility	TA6 : Synergies and services	TA7 : Training, education, outreach citizen science
<p>WP 1 : Management setup</p> <p>WP 2 : Financial and administration</p> <p>WP 3 : Controlling and reporting</p> <p>WP 4 : Consortium organization</p>	<p>WP 1 : Standardized access to data and metadata</p> <p>WP 2 : Compute4PUNCH</p> <p>WP 3 : Automatisatation and optimization of big data management workflows</p>	<p>WP 1 : Statistical methods</p> <p>WP 2 : Numerical methods and simulation</p> <p>WP 3 : Machine learning methods</p> <p>WP 4 : Methods for analysis across datasets</p>	<p>WP 1 : Digital research products and their catalogue</p> <p>WP 2 : Mapping and collating metadata</p> <p>WP 3 : Implementation of interfaces</p> <p>WP 4 : Build and operate the science data portal</p>	<p>WP 1 : Implications for discovery potential and reproducibility</p> <p>WP 2 : Dynamic filtering</p> <p>WP 3 : Dynamic archiving</p> <p>WP 4 : Scaling workflows</p> <p>WP 5 : Evaluation and validation of instrument response</p>	<p>WP 1 : Marketplace</p> <p>WP 2 : Authorization and authentication infrastructure</p> <p>WP 3 : FAIRness</p> <p>WP 4 : Open-source data analysis tools</p> <p>WP 5 : Services in big data management</p>	<p>WP 1 : raining of scientists</p> <p>WP 2 : Education of students</p> <p>WP 3 : Public outreach</p> <p>WP 4 : Support for citizen science</p>

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Objectives and aims :

How to use and manage big data	Science data platform	Data archives
How to assure FAIR principles	Description of data, metadata, persistent identifiers, analysis workflows and code, simulation, and knowledge	Open source codes
Deal with irreversibility challenge	Establish a Marketplace for tool methods and services	Detailed use cases
Facilitate cross experiment and cross community data analysis	Educate professionals and non professionals	Data management
Enable live analysis and live peer review		Methods