

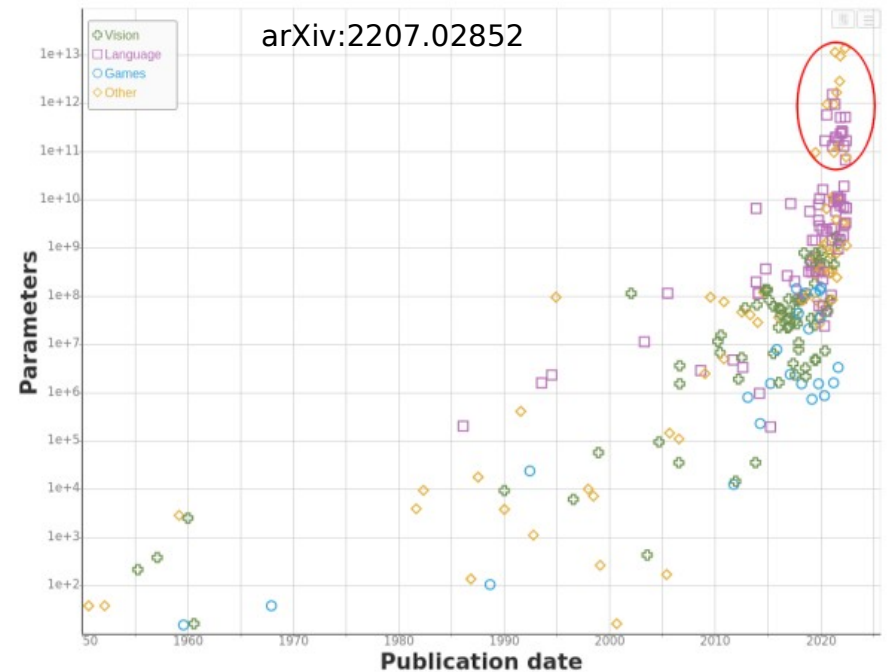
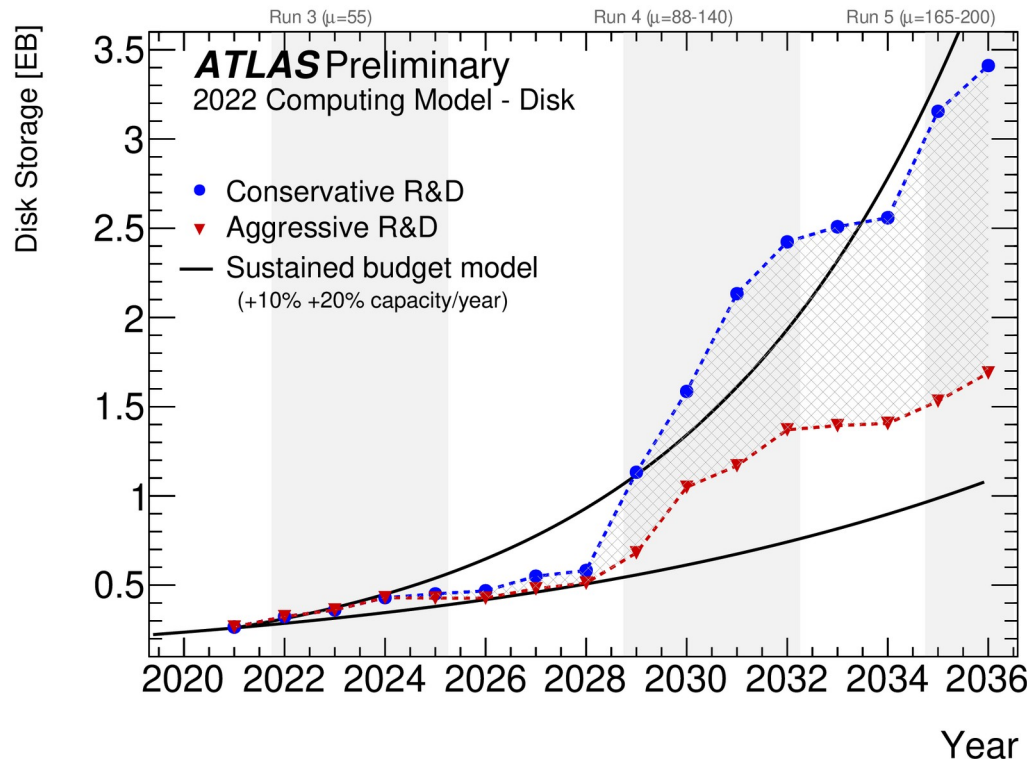
KET Strategy for ErUM-Data

Thomas Kuhr

22.11.2023

Data Challenges and Opportunities

- Increasing data rate and volume due to improved instruments



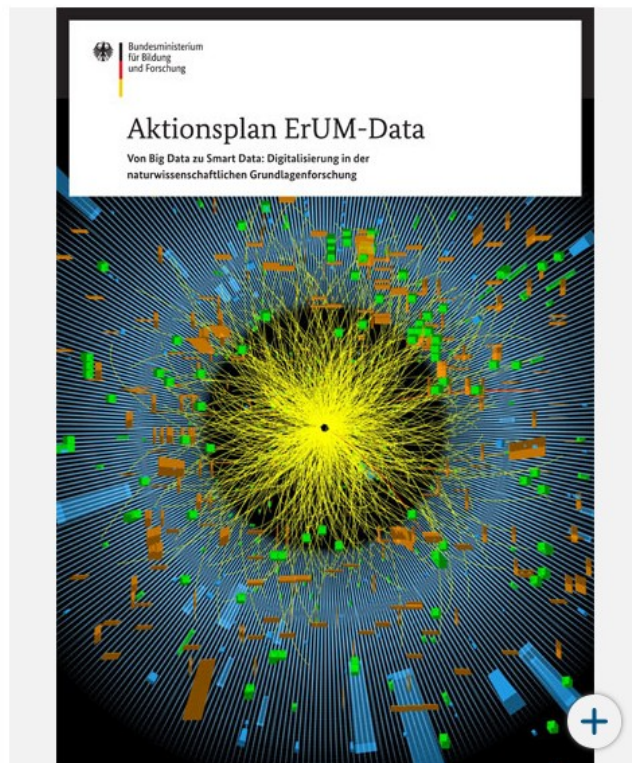
- New opportunities offered by new technologies

ErUM-Data

Aktionsplan ErUM-Data

Von Big Data zu Smart Data: Digitalisierung in der naturwissenschaftlichen Grundlagenforschung

Datum 01/2022



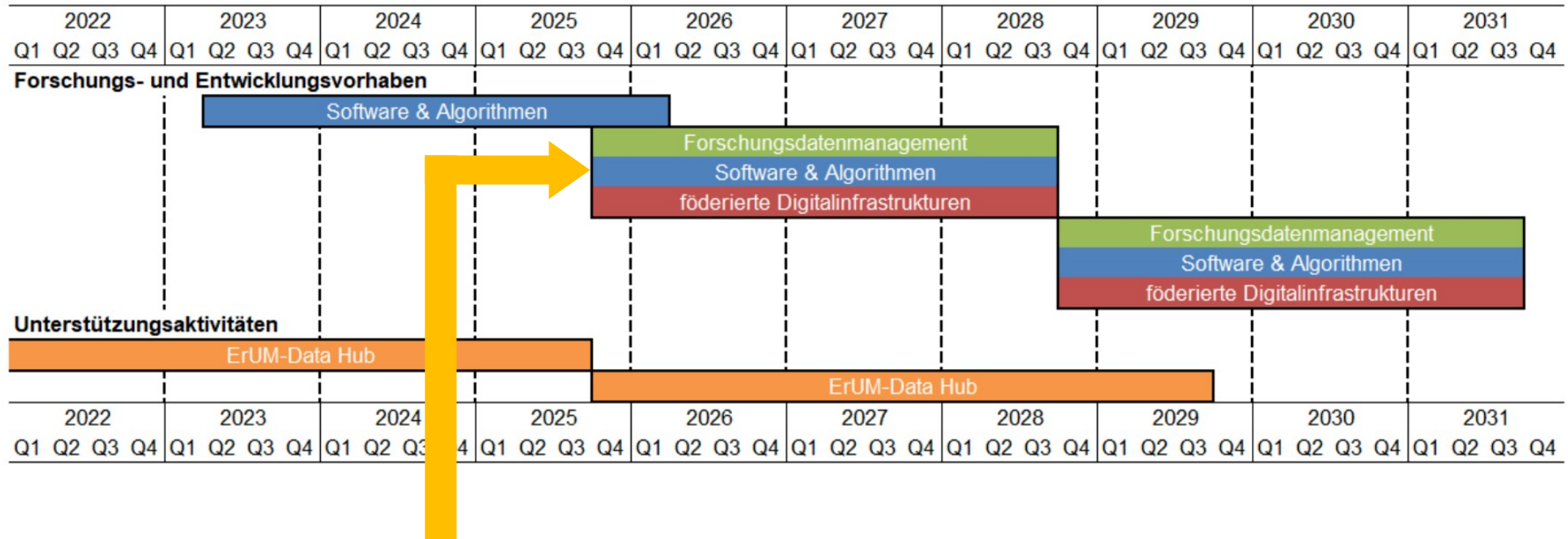
Ausgestaltung und Förderprozess

Das BMBF sieht für den Aktionsplan ErUM-Data eine Laufzeit von 2020 bis 2030 vor. Die Dauer der einzelnen Maßnahmen richtet sich bedarfsgerecht an den förderrechtlichen Möglichkeiten aus. Unter Vorbehalt verfügbarer Haushaltsmittel sind für die Fördermaßnahmen insgesamt bis zu 120 Millionen Euro vorgesehen.



		Themenfelder		
		Forschungsdatenmanagement	Föderierte Digitalinfrastrukturen	Software und Algorithmen
Ziele	Wissenschaft vernetzen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Digitale Kompetenzen ausbauen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Transfer und Kommunikation stärken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Timeline and New ErUM-Data Call



➔ Deadline for proposals: January 15th

➔ Start of projects: October 1st

➤ https://pt.desy.de/bekanntmachungen/30092024__data/index_ger.html

Interdisciplinarity

Software and Algorithms

- Interdisciplinarity is a necessary requirement
- Collaboration within the ErUM subject areas can be possible as well as between different ErUM subject areas
- To be explained in the proposal

Federated Infrastructures and Research Data Management

- Collaboration within the ErUM subject areas or between different ErUM subject areas are NOT a requirement for funding
- But: funding measure aims towards setting up structures for the whole community or beyond; potential for transfer of methods; build synergies and create knowledge transfer
- "Die Fördermaßnahme zielt nicht auf Lösungen ab, die nur für ein einzelnes Experiment oder für eine einzelne Forschergruppe anwendbar sind"

Federated Infrastructures

Planned projects building on work in  IDIMUM

- Sustainable Federated Compute Infrastructures (SUSFECIT)
Markus Schumacher
- Distributed Storage
Torsten Harenberg, Christian Voß
- Analysis Facilities
Lukas Heinrich

Software & Algorithms Current Projects

	KAT	KET	KfB	KFN	KFS	KFSI	KHuK	RDS	Inf./M.	Industr.
KI4D4E				X	X				X	X
VIPR		X		X	X					X
KISS	X	X					X	X	X	
ErUM-Wave	X		X						Geoph.	
KI-Morph					X				X	
AlSafety	X	X							X	X
EvalSpek-ML				X	X		X	X		X
OPAL-FEL			X		X					X
4D-KI-track			X		X					
ErUM-IFT	X					X		X		X

- 10 projects with funding of 17.4 M€
- ~50 sketch applications were submitted

Software & Algorithms with Focus on AI and ML

- Follow up projects of running projects
- New projects, e.g. on
 - FPGAs
 - Sustainable software
 - Models/likelihoods
 - Quantum competence center
 - Tracking?
 - IFT?
 - ...

Research Data Management

- Demarcation from NFDI maybe most challenging
- Few project ideas so far, e.g. LLMs for information retrieval
- Probably room for further project ideas

Coordination

Coordination

- Among ErUM-Data proposals
- With NFDI consortia (PUNCH4NFDI, DAPHNE)
- With international projects (Rucio, EOSC, JENA, HSF, ...)
- "Eine Verschränkung der Aktivitäten mit nationalen und internationalen Initiativen wie der NFDI, der EOSC und dem WLCG sind, wo möglich, erforderlich“

Supported by

- ErUM-Data Hub
- DIG-UM
- KET Computing and Software Panel



ERUM
DATA HUB



ErUM-Data Hub

**ERUM-DATA-HUB
EVENT PROGRAMME 2024**

26 FEB - 1 MAR	DEEP LEARNING SCHOOL BASIC CONCEPTS	WIEHL
25 MAR - 26 MAR	DEEP LEARNING TRAIN-THE-TRAINER	DRESDEN
21 MAY - 24 MAY	ADVANCED DEEP LEARNING ACTIVE TRAINING COURSE	FILDERSTADT
10 JUN	NETWORK DAY ERUM-DATA CONNECT	AACHEN
17 JUN	SUSTAINABILITY IN ERUM DATA ONLINE SHORT PITCH & DISCUSSION	ONLINE
19 AUG - 22 AUG	FAST AND EFFICIENT PYTHON COMPUTING SCHOOL	AACHEN
26 AUG - 30 AUG	PyHEP.dev DEVELOPER'S WORKSHOP	AACHEN

MORE TO BE ANNOUNCED SOON!

**22 APR - 26 APR
HANNOVER MESSE**

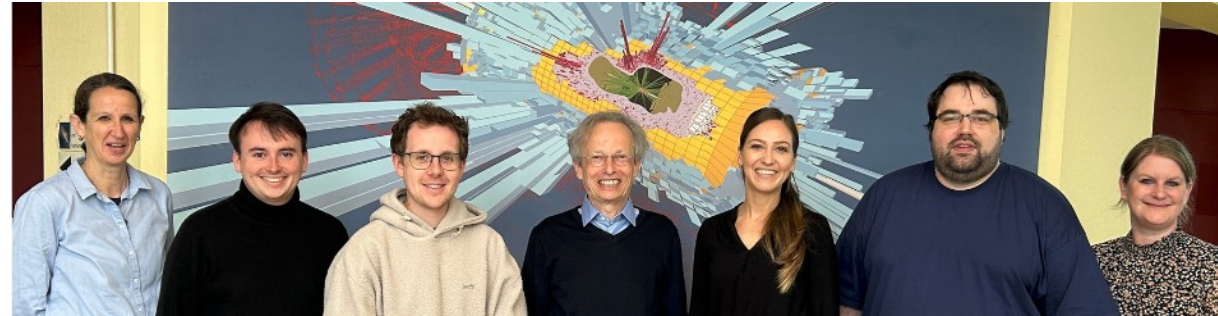
Registration & Contact:
www.erumdatahub.de
info@erumdatahub.de

Follow us on

Logo of the German Federal Government (Bund)

Logo of the Federal Ministry for Education and Research (Bundesministerium für Bildung und Forschung)

Logo of ERUM DATA



**SUSTAINABILITY IN ERUM-DATA
DISCUSSION EVENING**

NOV 18

16:00 - 18:30

Online Event (via Zoom)

More information on Indico:

<https://indico.desy.de/event/45927/>

Our mission is to...

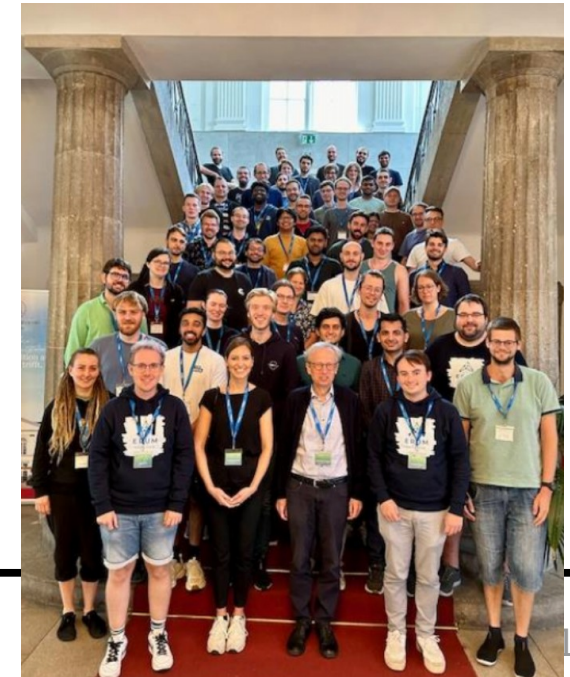
planning steps for an in-person meeting in 2025

connecting ErUM Scientists

disseminating sustainability initiatives & ideas

g you!

DIG-UM



Further Activities

- Tue 03.12. DIG-UM Annual Meeting

Update of the European Strategy for Particle Physics (ESPPU)

- Wed 29.11. Talk by Lukas Heinrich at KET Collider WS
- Mon 20.01. Talk by Markus Schumacher at concluding WS

4



Other essential scientific activities for particle physics

D. Large-scale data-intensive software and computing infrastructures are an essential ingredient to particle physics research programmes. The community faces major challenges in this area, notably with a view to the HL-LHC. As a result, the software and computing models used in particle physics research must evolve to meet the future needs of the field. ***The community must vigorously pursue common, coordinated R&D efforts in collaboration with other fields of science and industry, to develop software and computing infrastructures that exploit recent advances in information technology and data science. Further development of internal policies on open data and data preservation should be encouraged, and an adequate level of resources invested in their implementation.***