

# DIG-UM Annual Meeting 2023

Today: focus on **BMBF ErUM-Data Strategy Meeting 23-24-Jan-2024** towards project funding Federated Infrastructure, Software & Algorithms, Research Data Management from Q4/2025

Martin Erdmann  
RWTH Aachen University  
7-Dec-2023



## Digital Transformation: Organizational View

- 14:00** **Welcome: Spokesperson - DIG-UM Digitization Board**  
Sprecher: Martin Erdmann (RWTH Aachen University)
- 14:10** **DIG-UM Overview Board**  
Sprecher: Uli Katz (ECAP / FAU Erlangen-Nürnberg)
- 14:20** **DIG-UM Resource Provider Board**  
Sprecher: Guenter Duceck (LMU Muenchen)
- 14:27** **ErUM-Data-Hub: Report**  
Sprecher: Angela Warkentin (ErUM-Data-Hub (RWTH Aachen University))

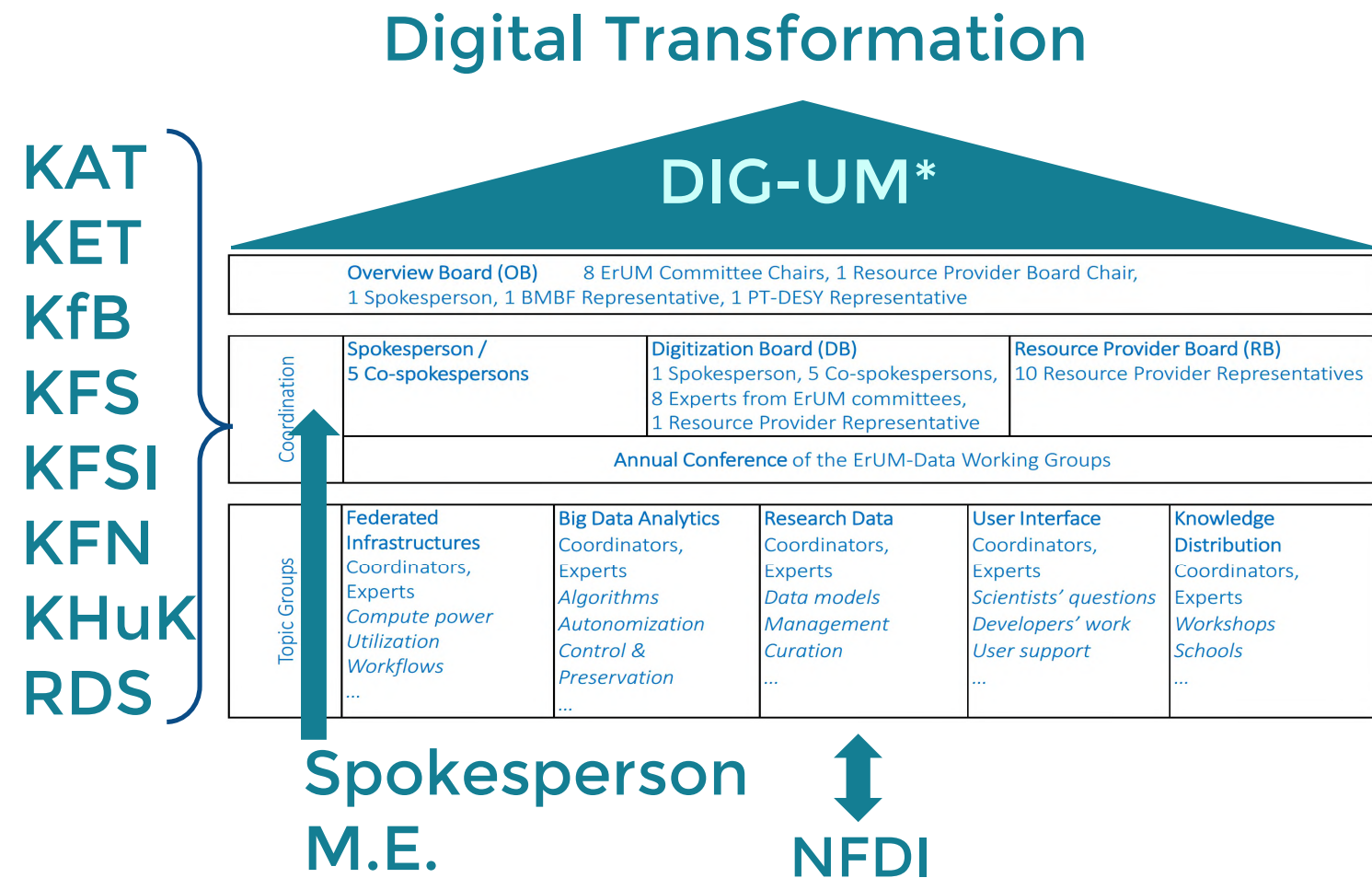
Break

## Preview and Discussion ErUM-Data Strategy Meeting

- 14:35** **BMBF: View on ErUM-Data**  
Sprecher: Simon Bohleber
- 14:50** **Federated Infrastructures**  
Sprecher: Markus Demleitner (Universität Heidelberg, Zentrum für Astronomie)
- 15:00** **Big Data Analytics**  
Sprecher: Thomas Kuhr (BELLE (BELLE II Experiment))
- 15:10** **Research Data Management**  
Sprecher: Dr. Astrid Schneidewind (JCNS at MLZ, FZ Jülich)
- 15:20** **User Interface**  
Sprecher: Pierre Schnizer (HZB)
- 15:30** **Knowledge Distribution**  
Sprecher: Judith Reindl
- 15:40** **Discussion**

# Structure: Digital Transformation

## Community Self-Organization




## BMBF Funding

### ErUM-Pro

Project funding  
Astroparticle  
Astronomy  
LHC experiments  
Synchrotron  
sources  
Neutron sources  
Observatories  
...

### ErUM-Data

120 M€ / 10 years  
Project funding for  
Software & Algorithms  
...  
 ErUM-Data-Hub  
Digital Knowledge  
Agent ` 2,5M€ / 4 years

\*DIGital transformation in research on Universe & Matter

# ErUM-Data Software & Algorithms

Hamburg/DESY Workshop 23.-24. Feb. 2023


<https://indico.desy.de/event/36573>

	No. joint projects (Verbünde)	No. of projects (Vorhaben)	(Requested) funding
Sketches (Skizzen)			74.5 Mio. €
Full proposals (Anträge)	33% of sketches		30.7 Mio. € 41% of sketches
funded <b>17.5 M€</b>	19% of sketches / 59% of full proposals	59% of full proposals	~17.5 Mio. € 23% of sketches 57% of full proposals

Annual meeting at FIAS/Frankfurt,  
29-Feb - 1-Mar 2024

<https://indico.desy.de/event/40597>

Introduction to ErUM-Data from the PT-DESY

Marvin Berlinghof 

SR4, DESY

14:10 - 14:30


Verbundvortrag - VIPR

Marina Ganeva 

SR4, DESY

14:30 - 14:45


Verbundvortrag - KISS

Gregor Kasieczka 

SR4, DESY

14:45 - 15:00


Verbundvortrag - KI4D4E

Sven Simon 

SR4, DESY

15:00 - 15:15


Verbundvortrag - AISafety

Matthias Schott 

SR4, DESY

15:15 - 15:30


Verbundvortrag - ErUM-IFT

Torsten Ensslin 

SR4, DESY

15:30 - 15:45


Verbundvortrag - OPAL-FEL

Henrik Tünnermann 

SR4, DESY

16:15 - 16:30


Verbundvortrag - EvalSpek-ML

Sebastian Busch 

SR4, DESY

16:30 - 16:45


Verbundvortrag - ErUM-WAVE

Prof. Conny Hammer 

SR4, DESY

16:45 - 17:00

Vorstellung Verbundantrag - aNNomalie

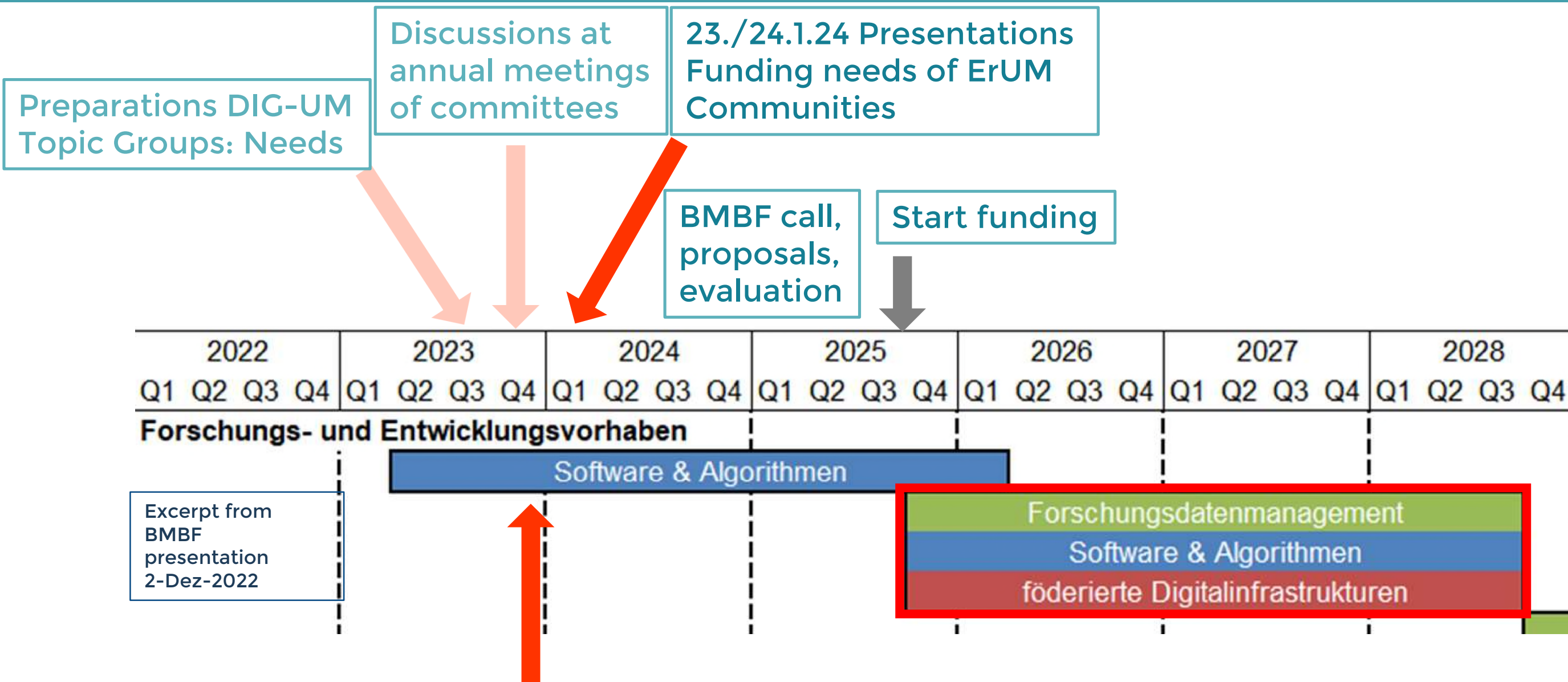
Soeren Lange 

SR4, DESY

17:00 - 17:15

# ErUM-Data Strategy Meeting 23/24-Jan-2024

## Discuss upcoming BMBF call for proposals

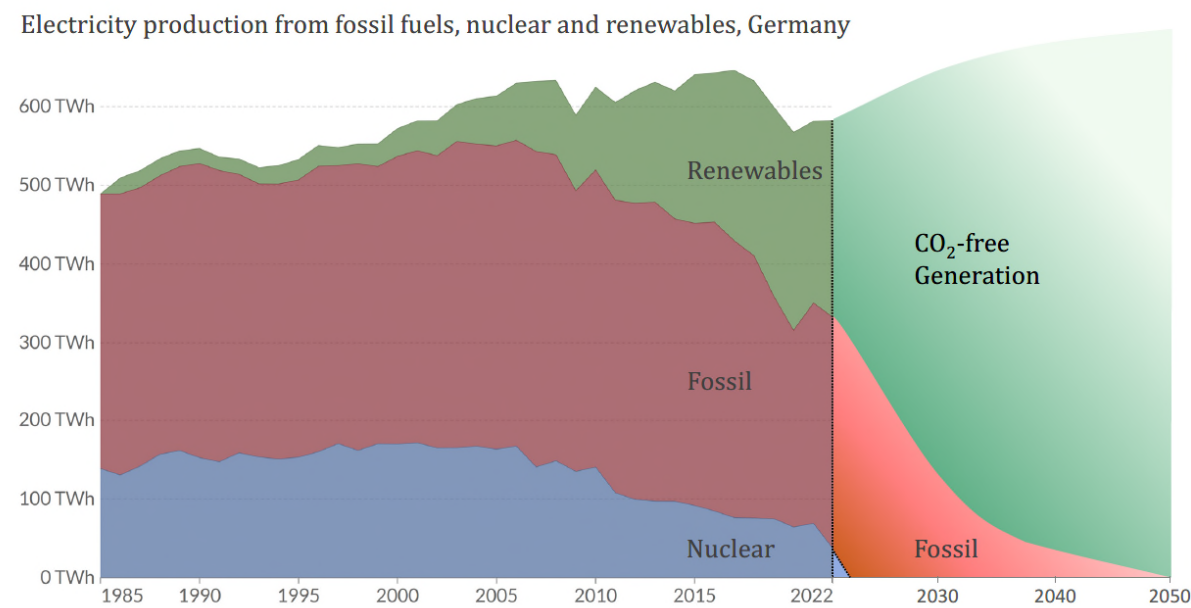


**TODAY: Annual meeting DIG-UM 11-Dec-2023, 14:00-16:00, followed by Overview Board meeting**

# Sustainability in ErUM Data – Workshop May 23

Developing a culture for sustainable science is growing consensus in community

→ Awareness in daily research: balance *knowledge gain* with *resource usage*



Source: Ember's Yearly Electricity Data; Ember's European Electricity Review; Energy Institute Statistical Review of World Energy  
OurWorldInData.org/energy • CC BY

## Portfolio of measures

Short term

Medium term

Longer term

Item	Call-to-action
Immediately or on <b>short time scale</b> with little effort these measures that can be implemented:	
S1	Raise awareness of the climate challenge at all levels.
S2	Disseminate knowledge of measures to address the challenge.
S3	Monitor and report energy consumption at job level.
S4	Consider carbon footprint for all investments and project plans.
On a <b>medium time scale</b> of a few years the following measures can be realized:	
M1	Make data FAIR to promote reuse.
M2	Reduce and compress data having the anticipated scientific value of the retained information and the resource requirements in mind.
M3	Optimize the choice of storing against re-calculating intermediate results.
M4	Use workflow management to make processing FAIR.
M5	Make software FAIR and reliable by following good software development practices and ensuring sustainable support.
M6	Design software for optimized energy consumption and provide tools to measure it.
M7	Continue research on potential of AI or other new technologies for efficient use of resources, but balance gain of research action against resource consumption of these developments.
M8	Monitor and report energy consumption at site and project level, provide information of the individual use per scientist/project/publication.
M9	Extend monitoring of resources beyond CO <sub>2</sub> e (water, material etc.).
M10	Train scientists in good practices.
M11	Regularly review and update the CO <sub>2</sub> e reduction plan.
M12	Strive to become a role model at all levels and help to establish sustainability in everyday life.
A <b>longer term</b> coordinated planning is required for the following measures:	
L1	Adjust computing in space and time to the availability of renewable energy, e.g. computing centers close to off-shore wind parks with a job scheduling using only or mainly the surplus available at a given time.
L2	Develop software and middleware that can respond dynamically to the availability of energy.
L3	Optimize power usage effectiveness.
L4	Re-use of produced heat.
L5	Adjust hardware lifetime considering emissions due to procurement and operation.
L6	Include the resources needed for continuous IT support into project planning.

<https://arxiv.org/abs/2311.01169>

# ErUM-Data Strategy Meeting 23/24-Jan-2024

## Open Questions

1. Interplay ErUM-Pro with ErUM-Data:
  - Experiment-related digitalization developments essential for their success
  - Cross-community creation & development of broadly applicable solutions
2. Matter, Universe, Particle:
  - Applications from two research fields mandatory?
3. Non-university partners mandatory for applications:
  - Industry partner?
  - Partner from large scale research infrastructure?
4. Federated Digital Infrastructures, Software & Algorithms, Research Data Management
  - Separate application fields or possible integration of all three areas in 1 application?
5. Recommendation for consortium size of application?

# Conclusions

- DIG-UM Community is well alive and very active
- Preparations for BMBF ErUM-Data Strategy meeting 23/24.1.24 well advanced
- Input your ideas to help bringing presentations in final shape
- Your search for consortium
  - Community Exchange by Erik Bründermann <https://indico.desy.de/event/28766>.
  - Topic groups plan for topical & local come-togethers (join mailing lists).
  - Talk to ErUM-Data-Hub Team how to find groups.

# backup



# Overview Board 20-Nov-2023

Committee		Representative	Deputy
Forschung mit Synchrotronstrahlung	KFS	Christian Gutt	Bridget Murphy
Rat Deutscher Sternwarten	RDS	Stefanie Walch-Gassner	Volker Springel
Hadronen- und Kernphysik	KHuK	Tetyana Galatyuk	Kai-Thomas Brinkmann
Elementarteilchenphysik	KET	Lutz Feld	Markus Schumacher
Forschung mit Neutronen	KFN	Frank Schreiber	Susan Schorr
Astroteilchenphysik	KAT	Uli Katz (Vorsitz)	Kathrin Valerius
Beschleunigerphysik	KfB	Erik Bründermann (Deputy)	Florian Hug
Forschung mit nuklearen Sonden & Ionenstrahlen	KFSI	Günther Dollinger	Daniel Severin
Guests:			
BMBF	BMBF	Simon Bohleber	
DESY Projektträger	PT.DESY	Salome Shokri-Kuehni	Sarah Bühler
Chair Resource Provider Board		Günter Duckeck	
Spokesperson		Martin Erdmann	
Scientific Secretary		Dirk Lützenkirchen-Hecht	

# Digitization Board from 20-Nov-2023

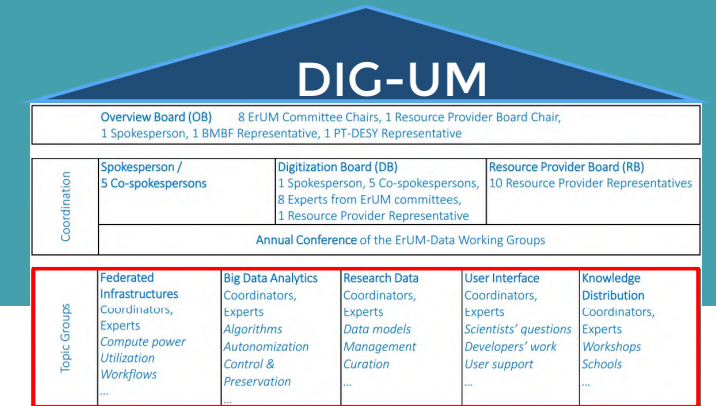
Committee		Representative	Deputy
Forschung mit Synchrotronstrahlung	KFS	Dirk Lützenkirchen-Hecht	Bridget Murphy
Rat Deutscher Sternwarten	RDS	Marcus Brüggem	Tobias Buck
Hadronen- und Kernphysik	KHu K	Tobias Stockmanns	Sören Lange
Elementarteilchenphysik	KET	Günter Quast	Christian Zeitnitz
Forschung mit Neutronen	KFN	Susan Schorr	Tobias Richter
Astroteilchenphysik	KAT	Andreas Haungs	Gernot Maier
Beschleunigerphysik	KfB	Erik Bründermann	
Forschung mit nuklearen Sonden & Ionenstrahlen	KFSI	Judith Reindl	
Spokesperson		Martin Erdmann (Spokesperson)	
Topic Group Federated Infrastructure		Markus Demleitner*	Kilian Schwarz
Topic Group Big Data Analytics		Thomas Kuhr*	Jan Steinheimer
Topic Group Research Data Management		Astrid Schneidewind*	Monica Valencia-Schneider
Topic Group User Interface		Pierre Schnizer*	Tim Ruhe
Topic Group Knowledge Distribution		Dirk Lützenkirchen-Hecht*	Judith Reindl
Representative Resource Provider Board		Günter Duckeck	Thorsten Kollegger
ErUM-Data-Hub (Guest)		Angela Warkentin	
ErUM-Data-Hub (Guest)		Peter Fackeldey	
ErUM-Data-Hub (Guest)		Benjamin Fischer	

\*Deputy Spokesperson

# Resource Provider Board 22-Jul-2023

Computing Site	Representative	email	Deputy	email
DESY	Volker Gülzow	volker.guelzow@desy.de	NN	
GSI	Thorsten Kollegger (Deputy)	t.kollegger@gsi.de	Dmytro Kresan	D.Kresan@gsi.de
KIT	Achim Streit	achim.streit@kit.edu	Andreas Petzold	andreas.petzold@kit.edu
AIP	Harry Enke	henke@aip.de	Arman Khalatyan	akhalatyan@aip.de
TIER 2 Sites:				
Aachen	Alexander Schmidt	alexander.schmidt@physik.rwth-aachen.de	Thomas Kress	thomas.kress@physik.rwth-aachen.de
Freiburg	Markus Schumacher	markus.schumacher@physik.uni-freiburg.de	Michael Böhler	michael.boehler@physik.uni-freiburg.de
Göttingen	Arnulf Quadt	aquadt@uni-goettingen.de	Sebastian Wozniowski	sebastian.wozniowski@uni-goettingen.de
LMU München	Günter Duckeck (Vorsitz)	Guenter.Duckeck@physik.uni-muenchen.de	Otmar Biebel	otmar.biebel@physik.uni-muenchen.de
MPI München	Stefan Kluth	skluth@mpp.mpg.de	NN	
Wuppertal	Christian Zeitnitz	zeitnitz@uni-wuppertal.de	Marisa Sandhoff	sandhoff@uni-wuppertal.de

# DIG-UM Topic Group Mailing Lists



Register yourself at

<https://lists.rwth-aachen.de/postorius/lists/erum-data-federated-infrastructure.lists.rwth-aachen.de>

<https://lists.rwth-aachen.de/postorius/lists/erum-data-big-data-analytics.lists.rwth-aachen.de>

<https://lists.rwth-aachen.de/postorius/lists/erum-data-research-data-management.lists.rwth-aachen.de>

<https://lists.rwth-aachen.de/postorius/lists/erum-data-user-interface.lists.rwth-aachen.de> <https://lists.rwth-aachen.de/postorius/lists/erum-data-knowledge-distribution.lists.rwth-aachen.de>

**LISTNAME=erum-data-XXX**

**XXX=federated-infrastructure, big-data-analytics, research-data-management, user-interface, knowledge-distribution**

- To subscribe, send e-mail to **LISTNAME-request@lists.rwth-aachen.de** with single word “**subscribe**” in the **subject**. Leave the body of the e-mail empty.
- Subscription is open to all ErUM scientists (list owners can administrate).
- Sending e-mails to list: Anyone on the mailing list can send e-mails to the entire list. Use exactly the registered e-mail address. Other e-mail addresses can sent to the entire list after approval by the group convenor.
- To unsubscribe, send e-mail to **LISTNAME-request@lists.rwth-aachen.de** with single word “**unsubscribe**” in the subject. Leave the body of the e-mail empty.

# Kalender 2024

Januar	Februar Hackathon	März	April	Mai	Juni	Juli	August	September	Oktober Software Workshop	November Besuch ErUM- Communities	Dezember DIG-UM Annual Meeting
1 Mo <small>Neujahr</small>	1 Do	1 Fr <small>Career Day</small>	1 Mo <small>Ostermontag</small>	1 Mi <small>Tag der Arbeit</small>	1 Sa	1 Mo	1 Do	1 So	1 Di	1 Fr <small>Allerheiligen</small>	1 So <small>1. Advent</small>
2 Di	2 Fr <small>Semesterende NRW</small>	2 Sa	2 Di <small>Semesterbeginn</small>	2 Do	2 So	2 Di	2 Fr	2 Mo	2 Mi	2 Sa	2 Mo
3 Mi	3 Sa	3 So	3 Mi	3 Fr	3 Mo	3 Mi	3 Sa	3 Di	3 Do <small>Tag der Dt. Einheit</small>	3 So	3 Di
4 Do	4 So	4 Mo <small>DPG</small>	4 Do	4 Sa	4 Di	4 Do	4 So	4 Mi	4 Fr	4 Mo	4 Mi
5 Fr	5 Mo	5 Di <small>Teilchenphysik</small>	5 Fr	5 So	5 Mi	5 Fr	5 Mo	5 Do	5 Sa	5 Di <small>Workshop</small>	5 Do
6 Sa <small>Heilige Drei Könige</small>	6 Di	6 Mi	6 Sa	6 Mo	6 Do	6 Sa	6 Di	6 Fr	6 So	6 Mi ?	6 Fr
7 So	7 Mi	7 Do	7 So	7 Di	7 Fr	7 So	7 Mi	7 Sa	7 Mo	7 Do	7 Sa
8 Mo	8 Do	8 Fr	8 Mo	8 Mi	8 Sa	8 Mo	8 Do	8 So	8 Di	8 Fr	8 So
9 Di	9 Fr	9 Sa	9 Di	9 Do <small>Christi Himmelfahrt</small>	9 So	9 Di	9 Fr	9 Mo	9 Mi	9 Sa	9 Mo
10 Mi	10 Sa	10 So	10 Mi	10 Fr	10 Mo	10 Mi	10 Sa	10 Di	10 Do	10 So	10 Di
11 Do	11 So	11 Mo <small>DPG</small>	11 Do	11 Sa	11 Di	11 Do	11 So	11 Mi	11 Fr	11 Mo	11 Mi
12 Fr	12 Mo <small>Rosenmontag</small>	12 Di	12 Fr	12 So <small>Muttertag</small>	12 Mi	12 Fr	12 Mo	12 Do	12 Sa	12 Di	12 Do
13 Sa	13 Di	13 Mi	13 Sa	13 Mo <small>ISC</small>	13 Do	13 Sa	13 Di	13 Fr	13 So	13 Mi	13 Fr
14 So	14 Mi	14 Do	14 So	14 Di	14 Fr	14 So	14 Mi	14 Sa	14 Mo	14 Do	14 Sa
15 Mo	15 Do	15 Fr	15 Mo	15 Mi	15 Sa	15 Mo	15 Do	15 So	15 Di	15 Fr	15 So
16 Di	16 Fr	16 Sa	16 Di	16 Do	16 So	16 Di	16 Fr	16 Mo	16 Mi <small>Software</small>	16 Sa	16 Mo
17 Mi	17 Sa	17 So	17 Mi	17 Fr	17 Mo	17 Mi	17 Sa	17 Di	17 Do	17 So	17 Di
18 Do	18 So	18 Mo <small>DPG</small>	18 Do	18 Sa	18 Di	18 Do	18 So	18 Mi	18 Fr	18 Mo	18 Mi
19 Fr	19 Mo	19 Di	19 Fr	19 So <small>Pfingsten</small>	19 Mi	19 Fr	19 Mo	19 Do	19 Sa	19 Di	19 Do
20 Sa	20 Di <small>Generative Models</small>	20 Mi	20 Sa	20 Mo <small>Pfingstmontag</small>	20 Do	20 Sa	20 Di <small>Computing</small>	20 Fr	20 So	20 Mi	20 Fr
21 So	21 Mi <small>FIAS</small>	21 Do	21 So	21 Di <small>School</small>	21 Fr	21 So	21 Mi <small>School</small>	21 Sa	21 Mo	21 Do	21 Sa
22 Mo <small>Workshop*</small>	22 Do <small>BDA</small>	22 Fr	22 Mo	22 Mi <small>DL</small>	22 Sa	22 Mo	22 Do	22 So	22 Di	22 Fr	22 So
23 Di <small>ErUM</small>	23 Fr <small>FIAS</small>	23 Sa	23 Di <small>Hannover</small>	23 Do <small>Advanced</small>	23 So	23 Di	23 Fr	23 Mo	23 Mi	23 Sa	23 Mo
24 Mi <small>Strategie</small>	24 Sa #	24 So	24 Mi <small>Messe</small>	24 Fr <small>Bernhäuser Forst</small>	24 Mo	24 Mi	24 Sa	24 Di	24 Do	24 So	24 Di <small>Heiligabend</small>
25 Do <small>Leiden</small>	25 So	25 Mo <small>TTT</small>	25 Do	25 Sa	25 Di	25 Do	25 So	25 Mi	25 Fr	25 Mo	25 Mi <small>1. Weihnachtstag</small>
26 Fr	26 Mo <small>School</small>	26 Di <small>Dresden</small>	26 Fr	26 So	26 Mi	26 Fr	26 Mo	26 Do	26 Sa	26 Di	26 Do <small>2. Weihnachtstag</small>
27 Sa	27 Di <small>DL Basics</small>	27 Mi	27 Sa	27 Mo	27 Do	27 Sa	27 Di <small>pyHEP.dev</small>	27 Fr	27 So <small>Ende der Sommerzeit</small>	27 Mi	27 Fr
28 So	28 Mi <small>Hotel zur Post</small>	28 Do	28 So	28 Di	28 Fr	28 So	28 Mi	28 Sa	28 Mo	28 Do <small>ErUM</small>	28 Sa
29 Mo	29 Do <small>Wiehl</small>	29 Fr <small>Karfreitag</small>	29 Mo	29 Mi	29 Sa	29 Mo	29 Do	29 So	29 Di	29 Fr <small>Besuch</small>	29 So
30 Di		30 Sa	30 Di	30 Do <small>Franleichnam</small>	30 So	30 Di	30 Fr	30 Mo <small>Semesterende</small>	30 Mi	30 Sa	30 Mo
31 Mi		31 So <small>Beginn der Sommerzeit</small>		31 Fr		31 Mi	31 Sa		31 Do <small>Reformationstag</small>		31 Di <small>Silvester</small>