

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 Duckeck (LMU Muenchen)
- 14:27** **ErUM-Data-Hub: Report**
Sprecher: Angela Warkentin (ErUM-Data-Hub (RWTH Aachen University))

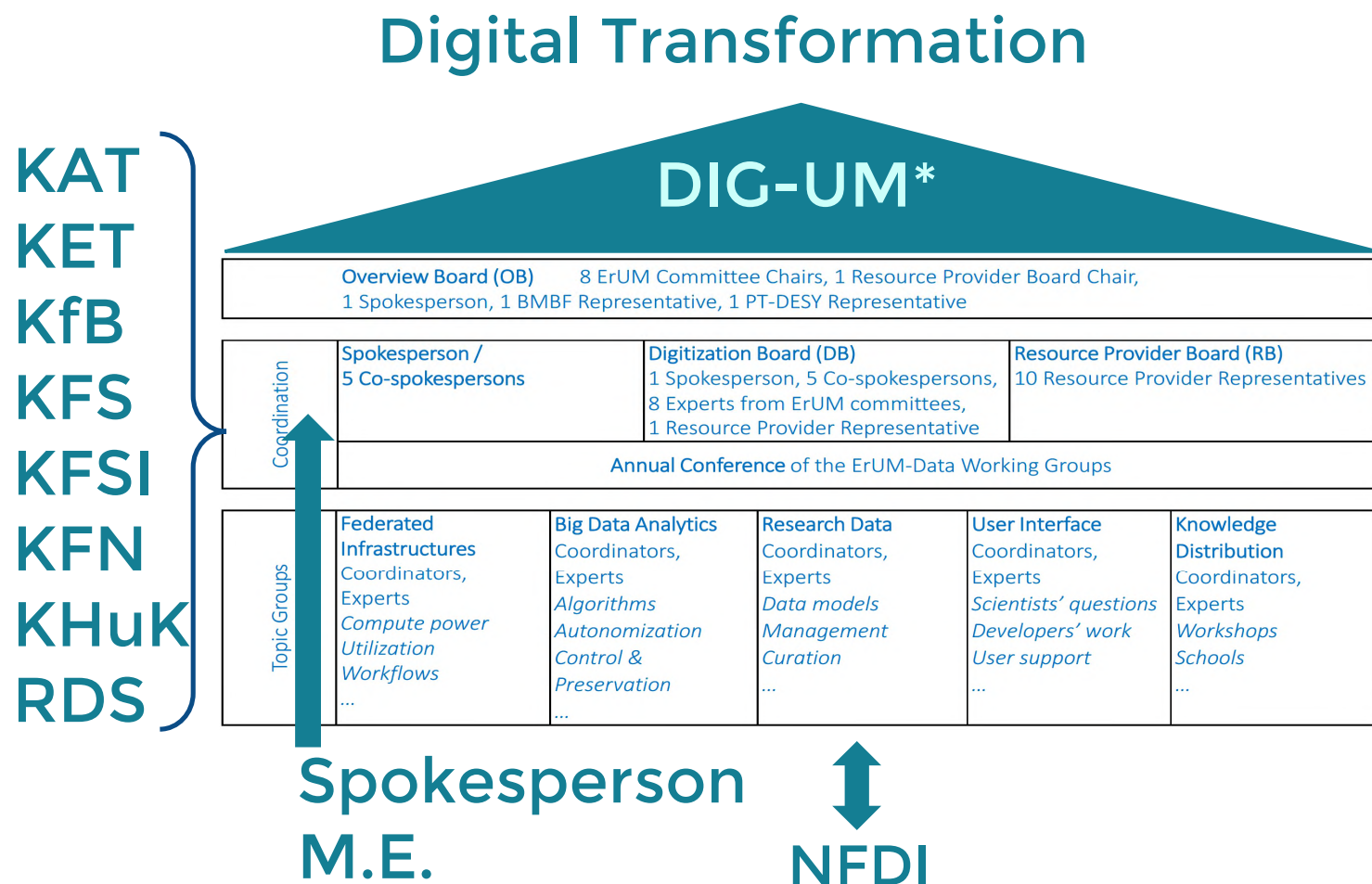
Break

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

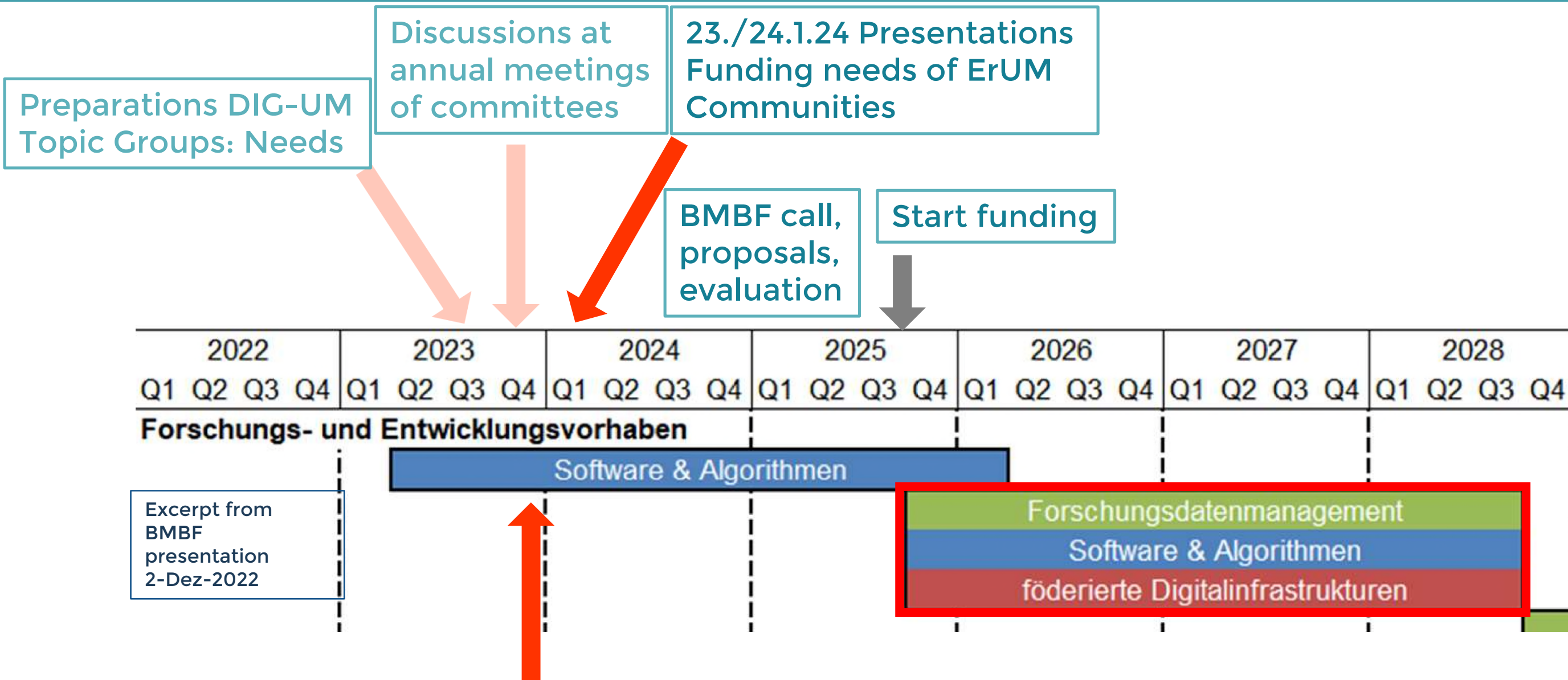
Hamburg/DESY Workshop 23.-24. Feb. 2023

	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 17.5 M€	19% of sketches / 59% of full proposals	59% of full proposals	~17.5 Mio. € 23% of sketches 57% of full proposals

Introduction to ErUM-Data from the PT-DESY SR4, DESY	Marvin Berlinghof	14:10 - 14:30
Verbundvortrag - VIPR SR4, DESY	Marina Ganeva	14:30 - 14:45
Verbundvortrag - KISS SR4, DESY	Gregor Kasieczka	14:45 - 15:00
Verbundvortrag - KI4D4E SR4, DESY	Sven Simon	15:00 - 15:15
Verbundvortrag - AISafety SR4, DESY	Matthias Schott	15:15 - 15:30
Verbundvortrag - ErUM-IFT SR4, DESY	Torsten Ensslin	15:30 - 15:45
Verbundvortrag - OPAL-FEL SR4, DESY	Henrik Tünnermann	16:15 - 16:30
Verbundvortrag - EvalSpek-ML SR4, DESY	Sebastian Busch	16:30 - 16:45
Verbundvortrag - ErUM-WAVE SR4, DESY	Prof. Conny Hammer	16:45 - 17:00
Vorstellung Verbundantrag - aNNomalie SR4, DESY	Soeren Lange	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

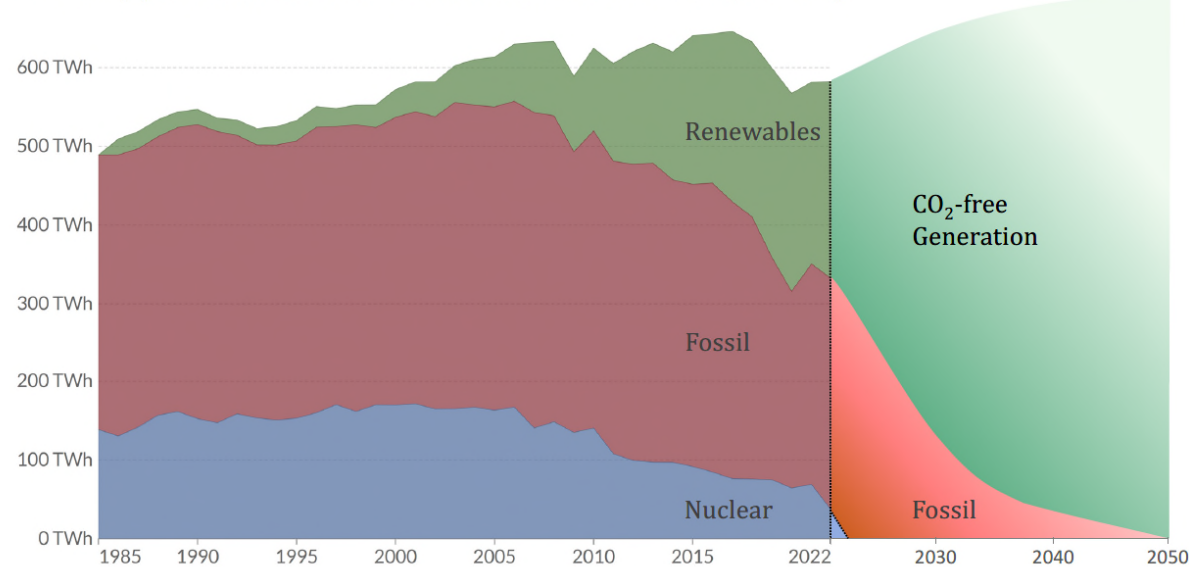
07.12.2023

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*

Electricity production from fossil fuels, nuclear and renewables, Germany



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 short time scale 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 medium time scale 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 ₂ e (water, material etc.).
M10	Train scientists in good practices.
M11	Regularly review and update the CO ₂ e reduction plan.
M12	Strive to become a role model at all levels and help to establish sustainability in everyday life.
A longer term 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

Join mailing list: see backup

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

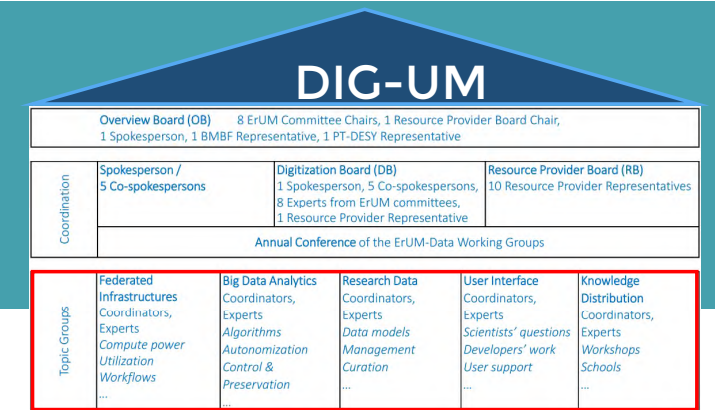
Committee		Representative	Deputy
Forschung mit Synchrotronstrahlung	KFS	Dirk Lützenkirchen-Hecht	Bridget Murphy
Rat Deutscher Sternwarten	RDS	Marcus Brüggem	Tobias Buck
Hadronen- und Kernphysik	KHu K	Tobias Stockmanns	Sören Lange
Elementarteilchenphysik	KET	Günter Quast	Christian Zeitnitz
Forschung mit 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:				
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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 Neujahr	1 Do	1 Fr Career Day	1 Mo Ostermontag 14	1 Mi Tag der Arbeit	1 Sa	1 Mo 27	1 Do	1 So	1 Di	1 Fr Alerheiligen	1 So 1. Advent
2 Di	2 Fr Semesterende NRW	2 Sa	2 Di Semesterbeginn	2 Do	2 So	2 Di	2 Fr	2 Mo 36	2 Mi	2 Sa	2 Mo 49
3 Mi	3 Sa	3 So	3 Mi	3 Fr	3 Mo 23	3 Mi	3 Sa	3 Di	3 Do Tag der Dt. Einheit	3 So	3 Di
4 Do	4 So	4 Mo DPG 10	4 Do	4 Sa	4 Di	4 Do	4 So	4 Mi	4 Fr	4 Mo 45	4 Mi
5 Fr	5 Mo 6	5 Di Teilchenphysik	5 Fr	5 So	5 Mi	5 Fr	5 Mo 32	5 Do	5 Sa	5 Di Workshop	5 Do
6 Sa Heilige Drei Könige	6 Di	6 Mi	6 Sa	6 Mo 19	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 41	7 Do	7 Sa
8 Mo 2	8 Do	8 Fr	8 Mo 15	8 Mi	8 Sa	8 Mo 28	8 Do	8 So	8 Di	8 Fr	8 So
9 Di	9 Fr	9 Sa	9 Di	9 Do Christi Himmelfahrt	9 So	9 Di	9 Fr	9 Mo 37	9 Mi	9 Sa	9 Mo 50
10 Mi	10 Sa	10 So	10 Mi	10 Fr	10 Mo 24	10 Mi	10 Sa	10 Di	10 Do	10 So	10 Di
11 Do	11 So	11 Mo DPG 11	11 Do	11 Sa	11 Di	11 Do	11 So	11 Mi	11 Fr	11 Mo 46	11 Mi
12 Fr	12 Mo Rosenmontag 7	12 Di	12 Fr	12 So Muttertag	12 Mi	12 Fr	12 Mo 33	12 Do	12 Sa	12 Di	12 Do
13 Sa	13 Di	13 Mi	13 Sa	13 Mo ISC 20	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 42	14 Do	14 Sa
15 Mo 3	15 Do	15 Fr	15 Mo 16	15 Mi	15 Sa	15 Mo 29	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 38	16 Mi Software	16 Sa	16 Mo 51
17 Mi	17 Sa	17 So	17 Mi	17 Fr	17 Mo 25	17 Mi	17 Sa	17 Di	17 Do	17 So	17 Di
18 Do	18 So	18 Mo DPG 12	18 Do	18 Sa	18 Di	18 Do	18 So	18 Mi	18 Fr	18 Mo 47	18 Mi
19 Fr	19 Mo 8	19 Di	19 Fr	19 So Pfingsten	19 Mi	19 Fr	19 Mo 34	19 Do	19 Sa	19 Di	19 Do
20 Sa	20 Di Generative Models	20 Mi	20 Sa	20 Mo Pfingstmontag 21	20 Do	20 Sa	20 Di Computing	20 Fr	20 So	20 Mi	20 Fr
21 So	21 Mi FIAS	21 Do	21 So	21 Di School	21 Fr	21 So	21 Mi School	21 Sa	21 Mo 43	21 Do	21 Sa
22 Mo Workshop* 4	22 Do BDA	22 Fr	22 Mo 17	22 Mi DL	22 Sa	22 Mo 30	22 Do	22 So	22 Di	22 Fr	22 So
23 Di ErUM	23 Fr FIAS	23 Sa	23 Di Hannover	23 Do Advanced	23 So	23 Di	23 Fr	23 Mo 39	23 Mi	23 Sa	23 Mo 52
24 Mi Strategie	24 Sa #	24 So	24 Mi Messe	24 Fr Bernhäuser Forst	24 Mo 26	24 Mi	24 Sa	24 Di	24 Do	24 So	24 Di Heiligabend
25 Do Leiden	25 So	25 Mo TTT 13	25 Do	25 Sa	25 Di	25 Do	25 So	25 Mi	25 Fr	25 Mo 48	25 Mi 1. Weihnachtstag
26 Fr	26 Mo School 9	26 Di Dresden	26 Fr	26 So	26 Mi	26 Fr	26 Mo 35	26 Do	26 Sa	26 Di	26 Do 2. Weihnachtstag
27 Sa	27 Di DL Basics	27 Mi	27 Sa	27 Mo 22	27 Do	27 Sa	27 Di pyHEP.dev	27 Fr	27 So Ende der Sommerzeit	27 Mi	27 Fr
28 So	28 Mi Hotel zur Post	28 Do	28 So	28 Di	28 Fr	28 So	28 Mi	28 Sa	28 Mo 44	28 Do ErUM	28 Sa
29 Mo	29 Do Wieht	29 Fr Karfreitag	29 Mo 18	29 Mi	29 Sa	29 Mo 31	29 Do	29 So	29 Di	29 Fr Besuch	29 So
30 Di		30 Sa	30 Di	30 Do Fronleichnam	30 So	30 Di	30 Fr	30 Mo Semesterende 40	30 Mi	30 Sa	30 Mo 1
31 Mi		31 So Beginn der Sommerzeit		31 Fr		31 Mi	31 Sa		31 Do Reformationstag		31 Di Silvester