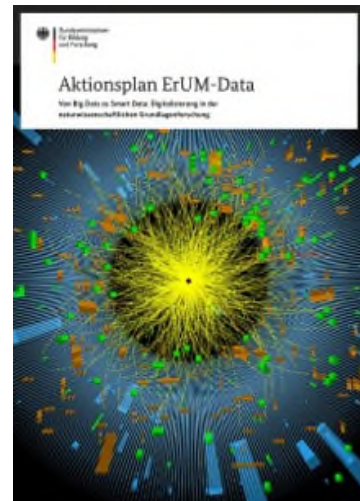
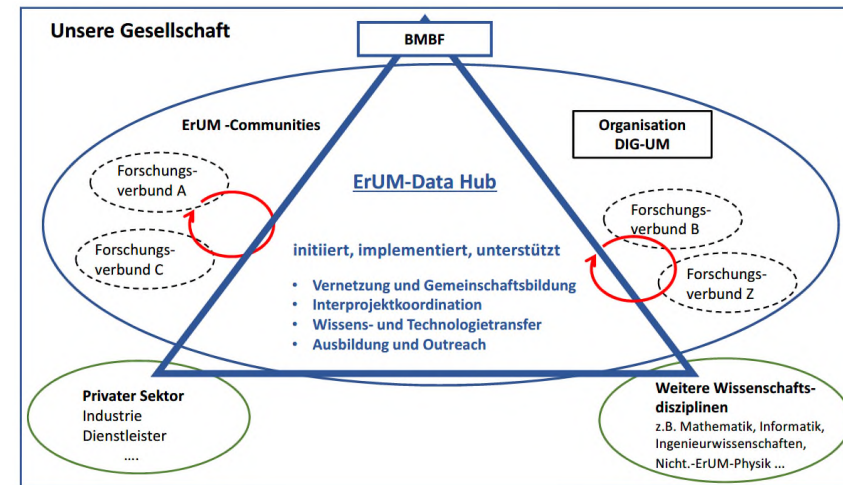


# Current: ErUM-Data & DIG-UM



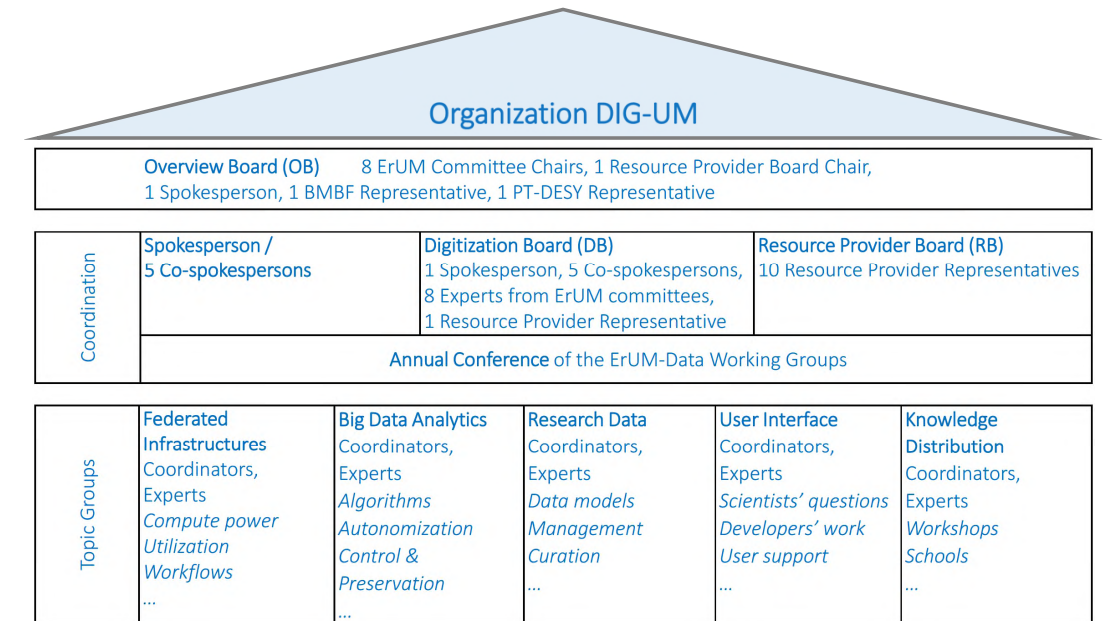
## BMBF: Call for proposals

Artificial Int. & Machine Learning  
 1-Sep-2021 project outlines (52).  
 Pre-selection → Funding application  
 1-Jul-2022 - 30-Jun-2025



## BMBF: ErUM-Data-Hub

Networking & Transfer Center  
 - Funding notice has arrived  
 - **Personnel search startet**



## DIG-UM Community organization

- Boards started
- Topical work started
- **Community Meeting 20-Jan-2022**

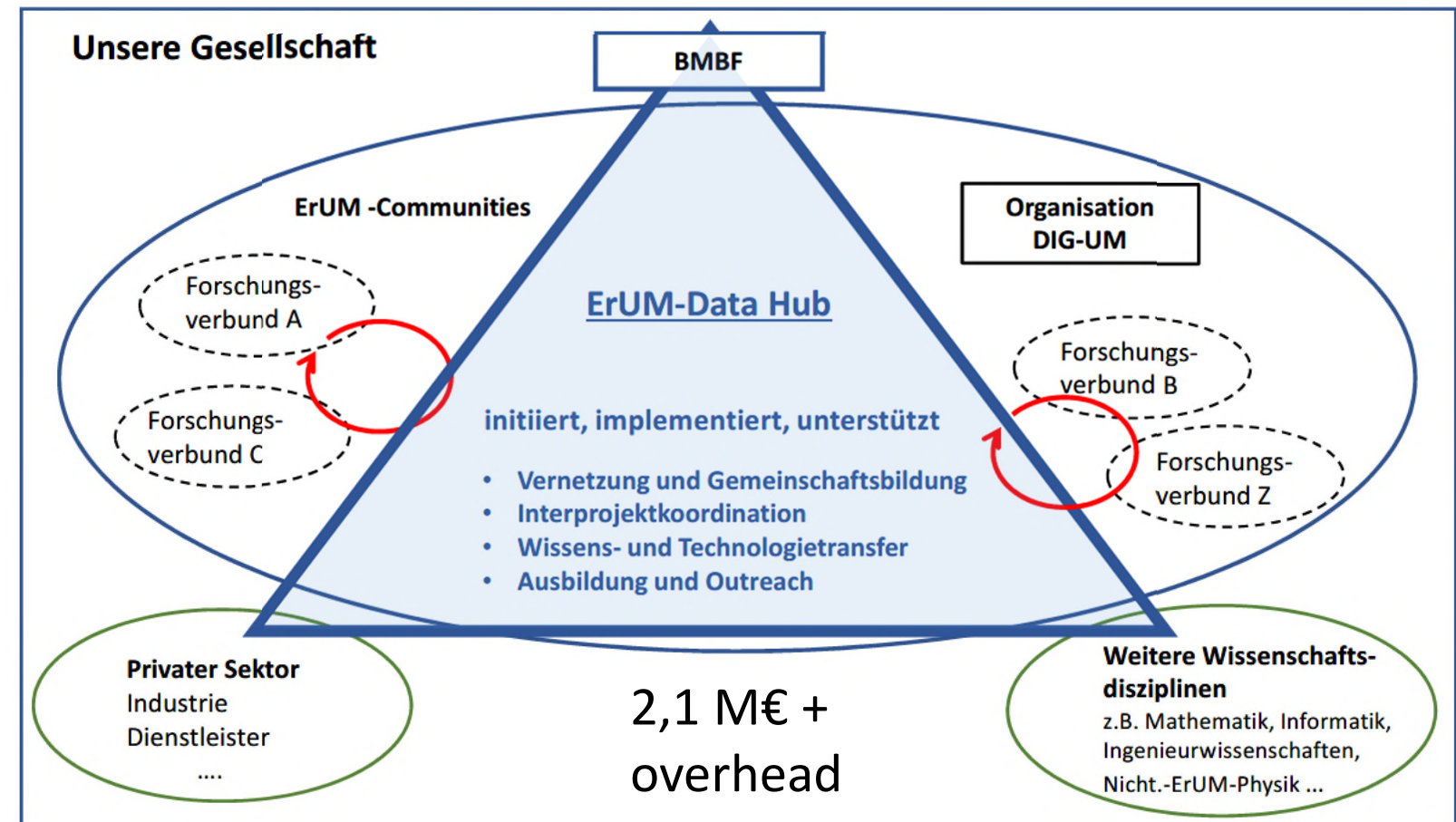


# ErUM-Data-Hub

## Networking & Transfer Center

- Networking and community building
- Interproject coordination
- Knowledge and technology transfer
- Training and outreach

BMBF Funding 1-Nov-21 – 30-Oct-25 → RWTH Aachen University



0,68 M€ Funds schools, workshops, ... still to be unlocked

Applications  
until 31.12.21

<b>Teamleiter (w/m/d)</b>	bis zu TVL E15
<b>Referenten (w/m/d)</b>	TVL E13
<b>Kommunikationswissenschaftler (w/m/d)</b>	TVL E13/2
<b>Technical Support (w/m/d)</b>	TVL E13/2

**Personnel search: please encourage suitable persons in your community**

# Community organisation DIG-UM

## TOPIC GROUPS

A particular challenge for the DIG-UM consortium representing research communities with altogether 10,000 researchers is the heterogeneity of the working groups from the different

## OVERVIEW BOARD

The OB has directive responsibility for the DIG-UM consortium. Members of the OB are the elected chairpersons of the 8 ErUM committees, and the chairperson of the Resource Provider

## DIG-UM

DIGITAL TRANSFORMATION IN THE  
RESEARCH ON UNIVERSE AND MATTER

### GUIDELINES

## CONTEXT

Research in the field of Universe and Matter brings together about 10,000 scientists from German universities and research centers working on astrophysics, astroparticle physics, hadron and nuclear physics, particle physics, accelerator research, as well as research with photons, neutrons and ion beams. What unites these scientists is research at leading national and international research facilities such as accelerators with their experiments and observatories. Big data and the ability to manage the upcoming data avalanche will be a prerequisite for the scientific exploitation of the next generation of research facilities, and thus for transformative or even revolutionary new scientific discoveries.

The Federal Ministry of Education and Research (BMBF) supports this basic research under the acronym *ErUM* (=Erforschung von Universum und Materie) and has published the Action Plan *ErUM-Data* for funding digital transformation in basic research [1]. A networking and transfer office, referred to as the *ErUM-Data-Hub*, will support activities aiming at the digital transformation process.

## DIG-UM ORGANIZATIONAL STRUCTURE

With the foundation of *DIG-UM*, the *ErUM* scientists constitute a bottom-up organization for synergetic research on the digital transformation. The goal of its collaborative work is the joint implementation of the objectives stated in the community white paper *Challenges and Opportunities of Digital Transformation in Fundamental Research on Universe and Matter - Recommendations of the ErUM Committees* [2]. With the here-described *DIG-UM* guidelines, the organizational basis for the collaborative work is laid down. The *DIG-UM* structure is presented in figure 1 and is detailed below. Note that there will be a strong link to the support provided by the above-mentioned *ErUM-Data-Hub*.

## Organization DIG-UM

Overview Board (OB) 8 ErUM Committee Chairs, 1 Resource Provider Board Chair, 1 Spokesperson, 1 BMBF Representative, 1 PT-DESY Representative					
Coordination	Spokesperson / 5 Co-spokespersons		Digitization Board (DB) 1 Spokesperson, 5 Co-spokespersons, 8 Experts from ErUM committees, 1 Resource Provider Representative		Resource Provider Board (RB) 10 Resource Provider Representatives
	Annual Conference of the ErUM-Data Working Groups				
Topic Groups	Federated Infrastructures Coordinators, Experts <i>Compute power Utilization Workflows</i> ...	Big Data Analytics Coordinators, Experts <i>Algorithms Autonomization Control &amp; Preservation</i> ...	Research Data Coordinators, Experts <i>Data models Management Curation</i> ...	User Interface Coordinators, Experts <i>Scientists' questions Developers' work User support</i> ...	Knowledge Distribution Coordinators, Experts <i>Workshops Schools</i> ...

- All 8 ErUM committees have agreed to DIG-UM Guidelines
- 2-Nov-2021: Organizational structure established
- **Community Meeting 20-Jan-2022: Celebration w BMBF, Topical work**

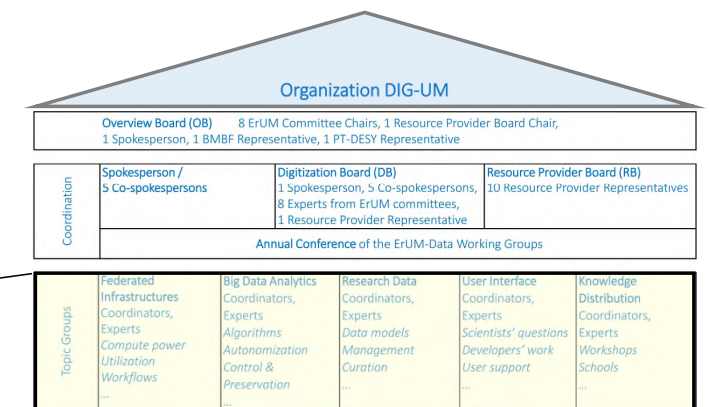
# ErUM-Data Community Meeting 20-Jan-2022

Preparation ongoing in small working groups,  
 Coordination by DIG-UM Digitization Board

14:00

**Celebration**

Welcome, Martin Erdmann  
 Introduction to new community organization DIG-UM, [Uli Katz](#)  
 BMBF view of Digital Transformation in ErUM, [Eckart Lilienthal tbc](#)  
 ErUM-Data-Hub Progress, Topic Perspectives, [Martin Erdmann](#)  
 Computing Resources for 8 ErUM Communities, [Achim Streit](#)



15:00

**Topic Perspectives**  
 Topic Groups, free discussions & guided discussions  
 Topic Group Talks  
 Farewell  
[Digital: Judith Reindl et al.](#)

Federated Infrastructures <a href="#">Kilian Schwarz,</a> <a href="#">Markus Demleitner</a>	Big Data Analytics <a href="#">Gregor Kasieczka,</a> <a href="#">Andrea Thorn</a>	Research Data <a href="#">Astrid Schneidewind,</a> <a href="#">Monica Valencia-Schneider</a>	User Interface <a href="#">Pierre Schnizer,</a> <a href="#">Tim Ruhe</a>	Knowledge Distribution <a href="#">Dirk Lützenkirchen-Hecht,</a> <a href="#">Katrin Link</a>
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17:00

Please make the date known to all interested ErUM scientists.  
 Register here <https://indico.desy.de/event/32315/>

Backup: DIG-UM Boards, Climate

# Overview Board 5-Nov-2021

Committee		Representative	Deputy
Forschung mit Synchrotronstrahlung	KFS	Jan-Dierk Grunwaldt	Sarah Köster
Rat Deutscher Sternwarten	RDS	Michael Kramer	Stefanie Walch-Gassner
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	Kathrin Valerius
Beschleunigerphysik	KfB	Shaukat Khan	Erik Bründermann
Forschung mit nuklearen Sonden & Ionenstrahlen	KFSI	Günther Dollinger	Daniel Severin
Guests:			
BMBF	BMBF	Simon Bohleber	
DESY Projektträger	PT.DESY	Wolfgang Ehrenfeld	
Chair Resource Provider Board		Achim Streit	
Spokesperson		Martin Erdmann	

Chairperson, Deputy

# Digitization Board 2-Nov-2021

Committee		Representative	Deputy
Forschung mit Synchrotronstrahlung	KFS	Christian Gutt	Bridget Murphy
Rat Deutscher Sternwarten	RDS	Michael Kramer	Stefanie Walch-Gassner
Hadronen- und Kernphysik	KHuK	Jan Steinheimer	Tobias Stockmanns
Elementarteilchenphysik	KET	Markus Schumacher	Christian Zeitnitz
Forschung mit Neutronen	KFN	Susan Schorr	Tobias Richter
Astroteilchenphysik	KAT	Andreas Haungs	Gernot Maier
Beschleunigerphysik	KfB	Erik Bründermann	Oliver Boine-Frankenheim
Forschung mit nuklearen Sonden & Ionenstrahlen	KFSI	Patrick Reichart	Judith Reindl
Spokesperson		Martin Erdmann	
Topic Federated Infrastructure		Kilian Schwarz	Markus Demleitner
Topic Big Data Analytics		Gregor Kasieczka	Andrea Thorn
Topic Research Data Management		Astrid Schneidewind	Monica Valencia-Schneider
Topic User Interface		Pierre Schnizer	Tim Ruhe
Topic Knowledge Distribution		Dirk Lützenkirchen-Hecht	Katrin Link
Representative Resource Provider Board		Achim Streit	

Chairperson, Deputies











# Resource Provider Board 18-Oct-2021

Computing Site	Representative	Deputy
DESY	Volker Gülzow	NN
GSI	Thorsten Kollegger	Dmytro Kresan
KIT	Achim Streit	Andreas Petzold
AIP	Harry Enke	Arman Khalatyan
TIER 2 Sites:		
Aachen	Alexander Schmidt	Thomas Kress
Freiburg	Markus Schumacher	Michael Böhler
Göttingen	Arnulf Quadt	
LMU München	Günter Dückeck	Otmar Biebel
MPI München	Stefan Kluth	NN
Wuppertal	Christian Zeitnitz	Marisa Sandhoff

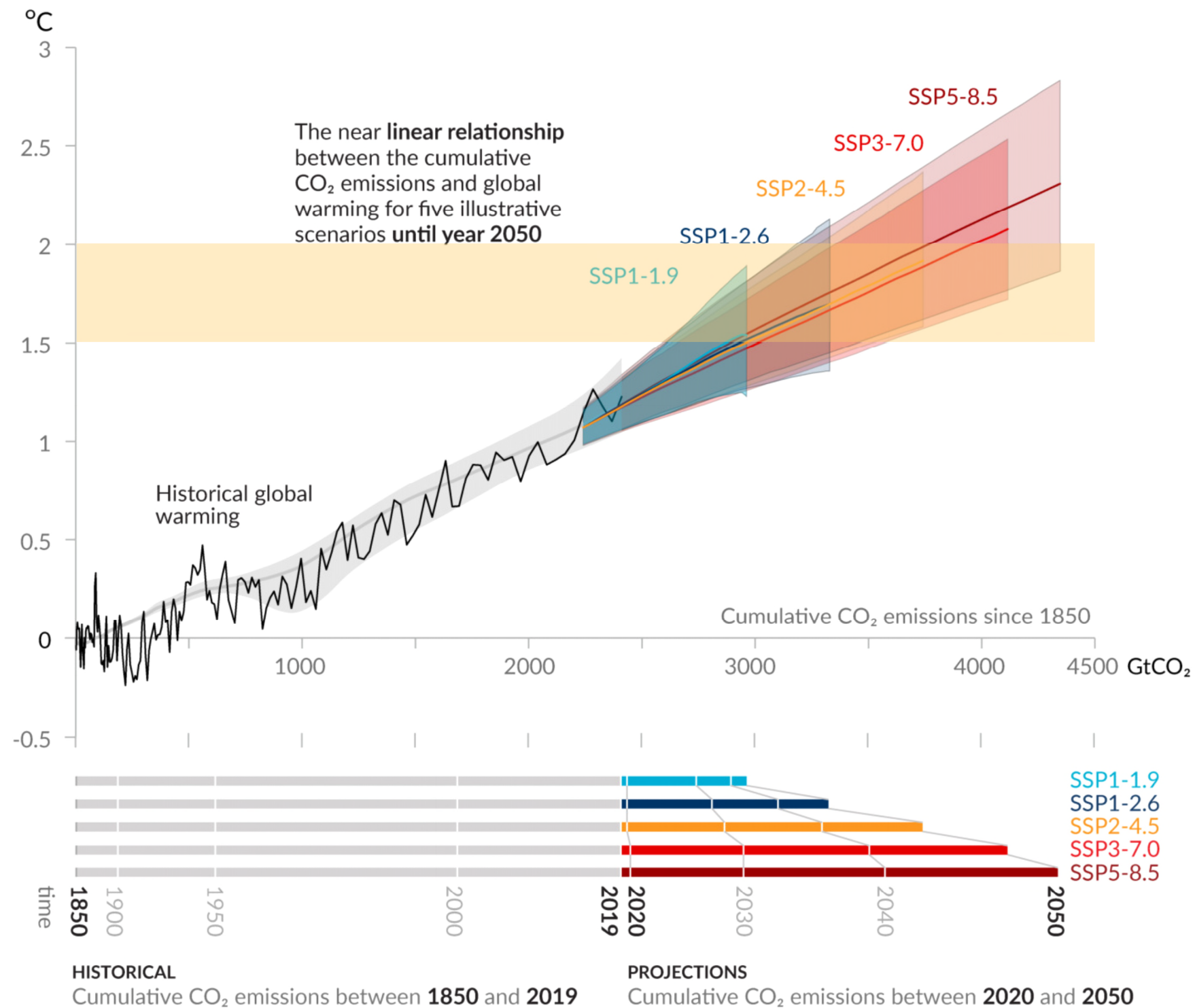
Chairperson, Deputy



# DIG-UM Topic Group Chairs & Deputies

	Federated Infrastructures	Big Data Analytics	Research Data	User Interface	Knowledge Distribution
KAT	Chairperson ROT Deputy GELB			 Tim Ruhe [TU Dortmund]	 Katrin Link [KIT]
KET		 Gregor Kasieczka [Uni Hamburg]			
KfB				 Pierre Schnizer [HZB]	
KFN			 Astrid Schneidewind [FZ Jülich]		
KFS		 Andrea Thorn [Uni Hamburg]			 Dirk Lützenkirchen-Hecht [Uni Wuppert.]
KFSI					
KHuK	 Kilian Schwarz [GSI Darmstadt]				
RDS	 Markus Demleitner [ZAH Heidelberg]		 Monica Valencia-Schneider [Uni Köln]		

Global surface temperature increase since 1850-1900 (°C) as a function of cumulative CO<sub>2</sub> emissions (GtCO<sub>2</sub>)



CO<sub>2</sub> stability ~1000 years

Future cumulative CO<sub>2</sub> emissions differ across scenarios, and determine how much warming we will experience

- SSP1-1.9
- SSP1-2.6
- SSP2-4.5
- SSP3-7.0
- SSP5-8.5