

The Django Academic Community Platform (DJAC)

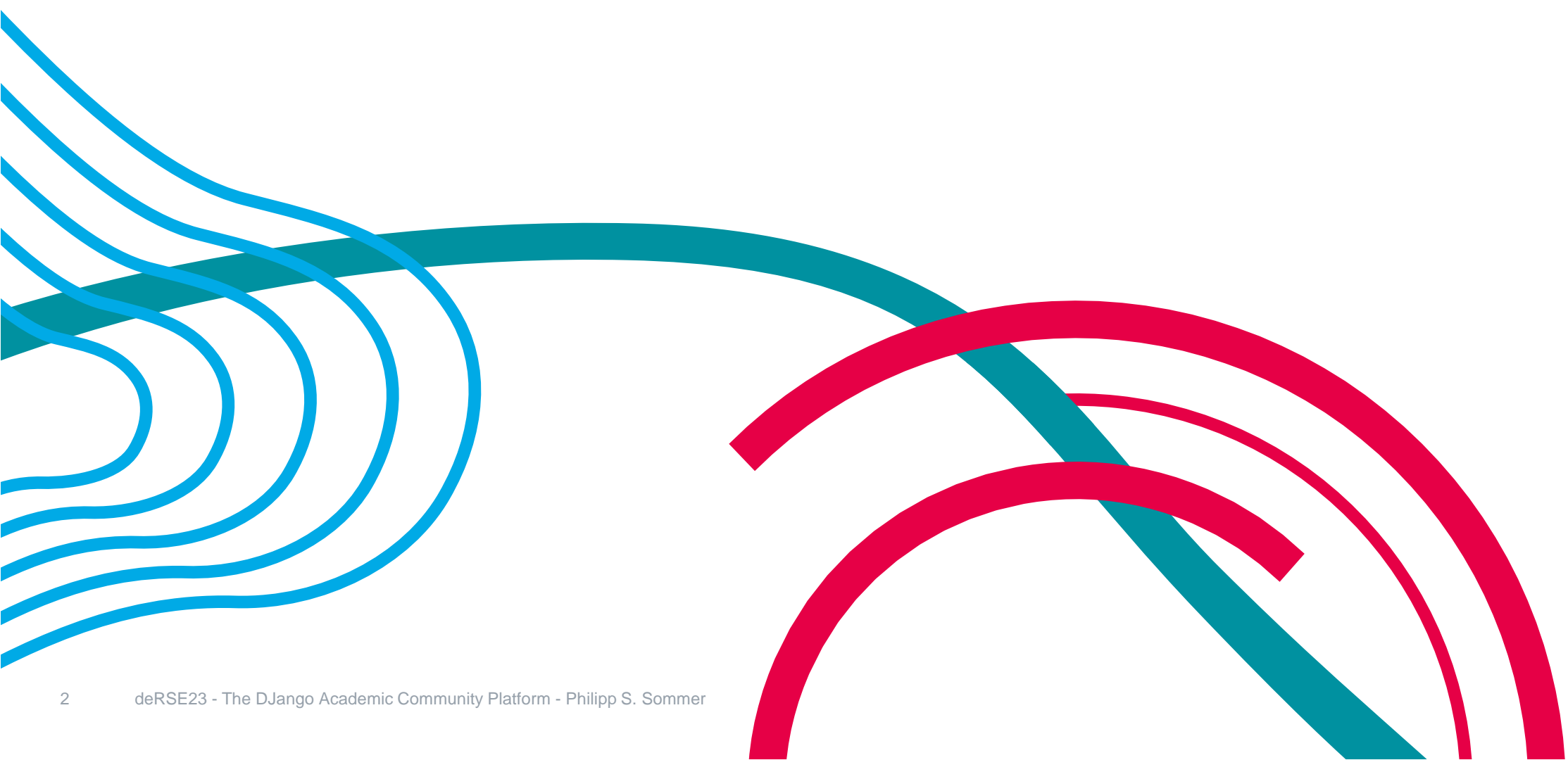
An open-source website for transparent discussion, collaboration and management in an academic community

Philipp S. Sommer

Helmholtz-Zentrum Hereon
Helmholtz Coastal Data Center (HCDC)

deRSE23 - Paderborn, Feb 20th 2023

Today's Research Happens in Communities



Today's research happens in Communities

And what does a community need?

Structure

Roles

Collaboration
Tools

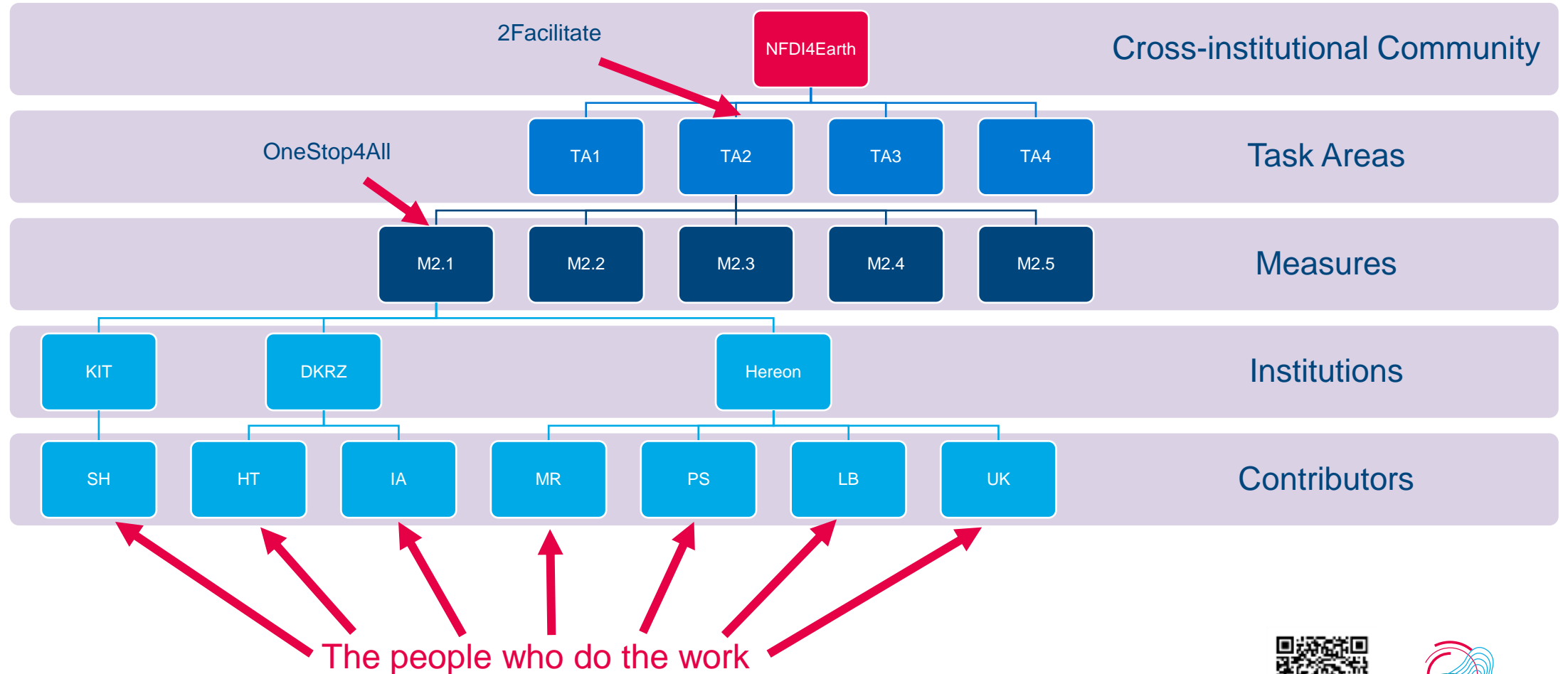


Community Structures

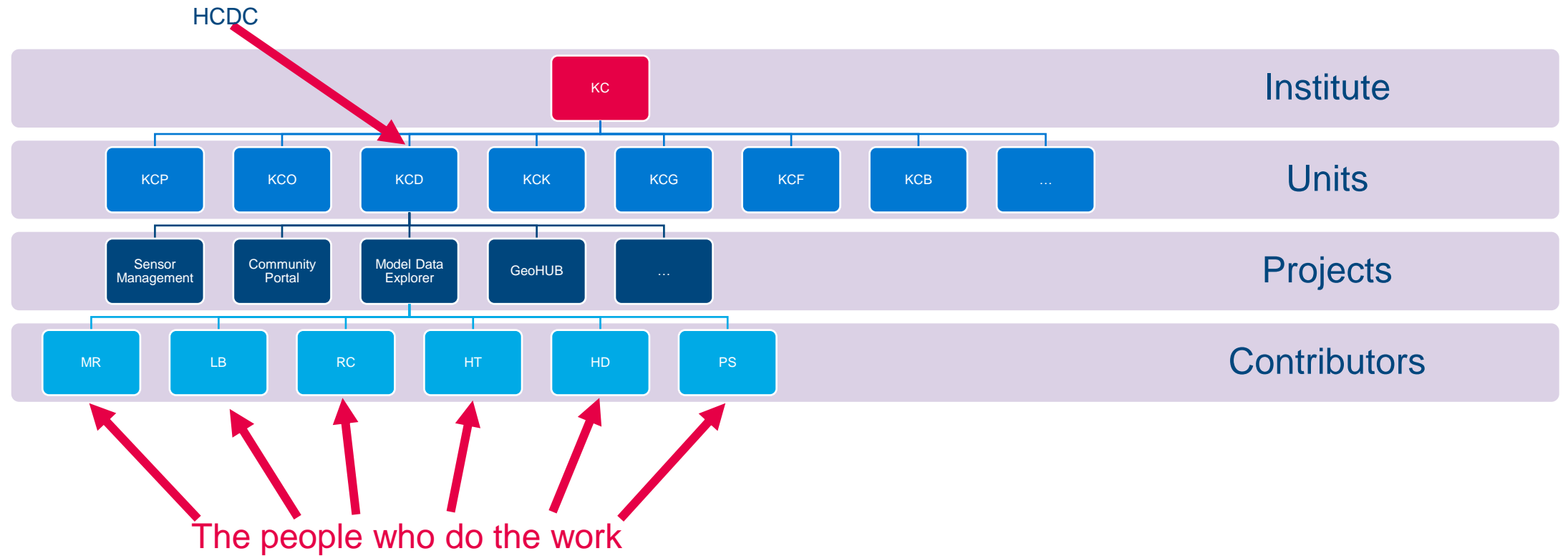


Structure

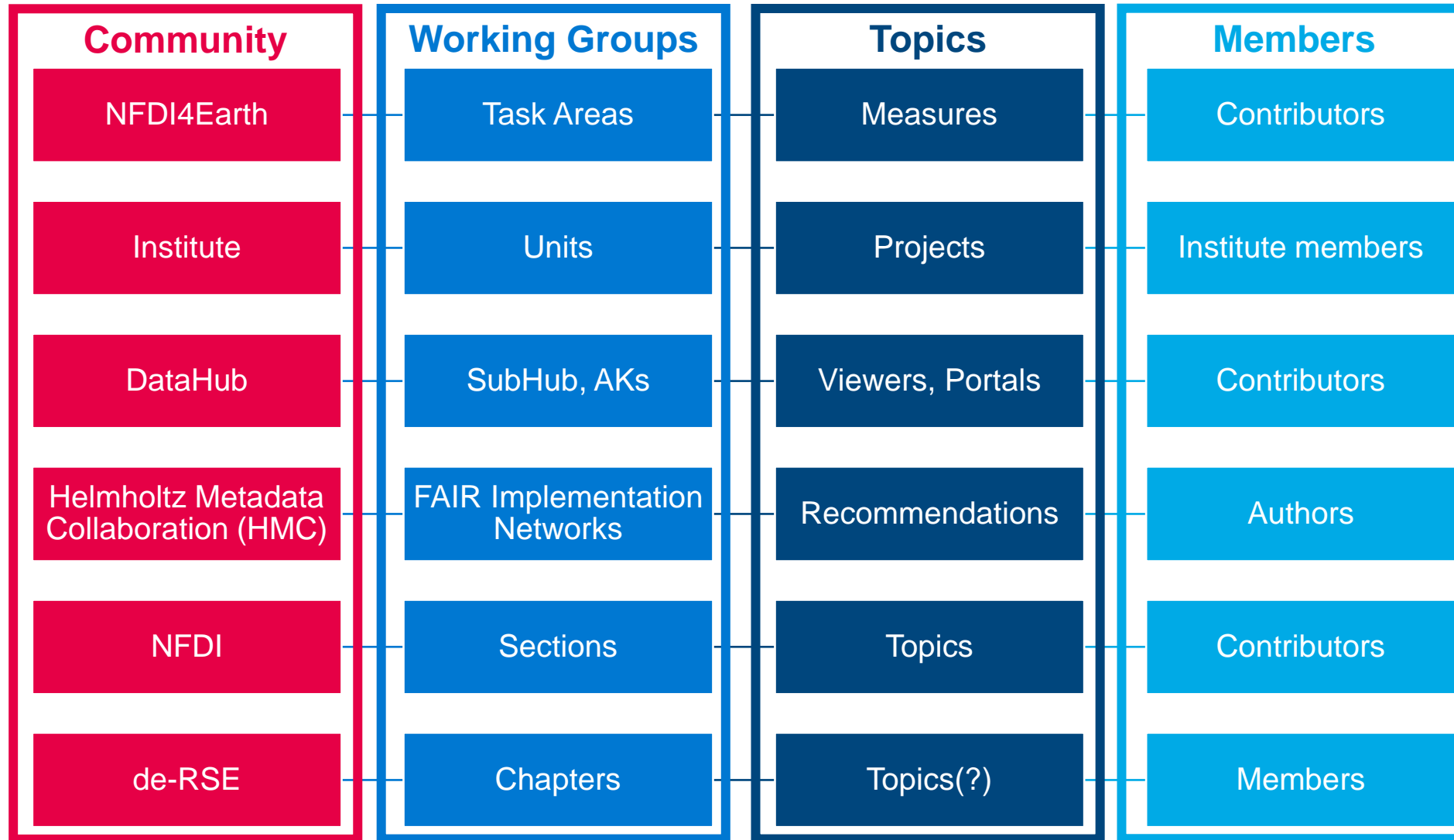
NFDI4Earth Community Structure



The Institute of Carbon Cycles



A common community structure



The core elements in a community structure

Community

A large Interdisciplinary, international, cross-institutional group of scientists that want to collaborate

Working Groups

A group of scientists with interest in the same field and a high chance for collaboration in different projects

Topics

A concrete project that scientists in the community work on

Members

The members (scientists) of a community



Roles in a community



Roles

Roles in a community

Community Member

Regular member of the community

Community Manager

Member of the management board

Working Group Leader

Topic expert
Responsible for moderation and management of a working group

Topic Leader

Topic expert
Responsible for one task or project in the community

Organization Contact

Contact person for a research institution in the community

Event Organizer

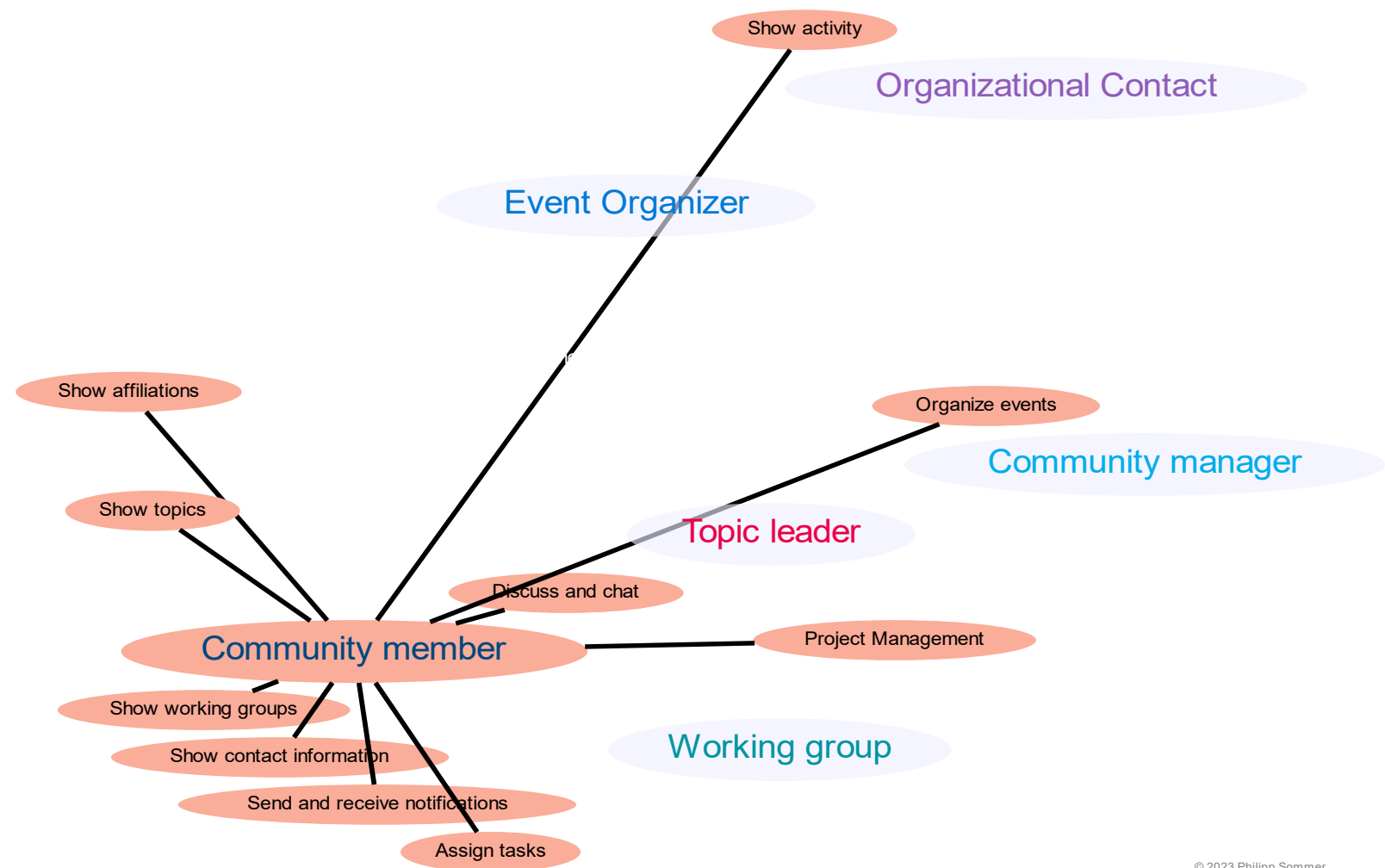
Organizer of a community event



Community roles

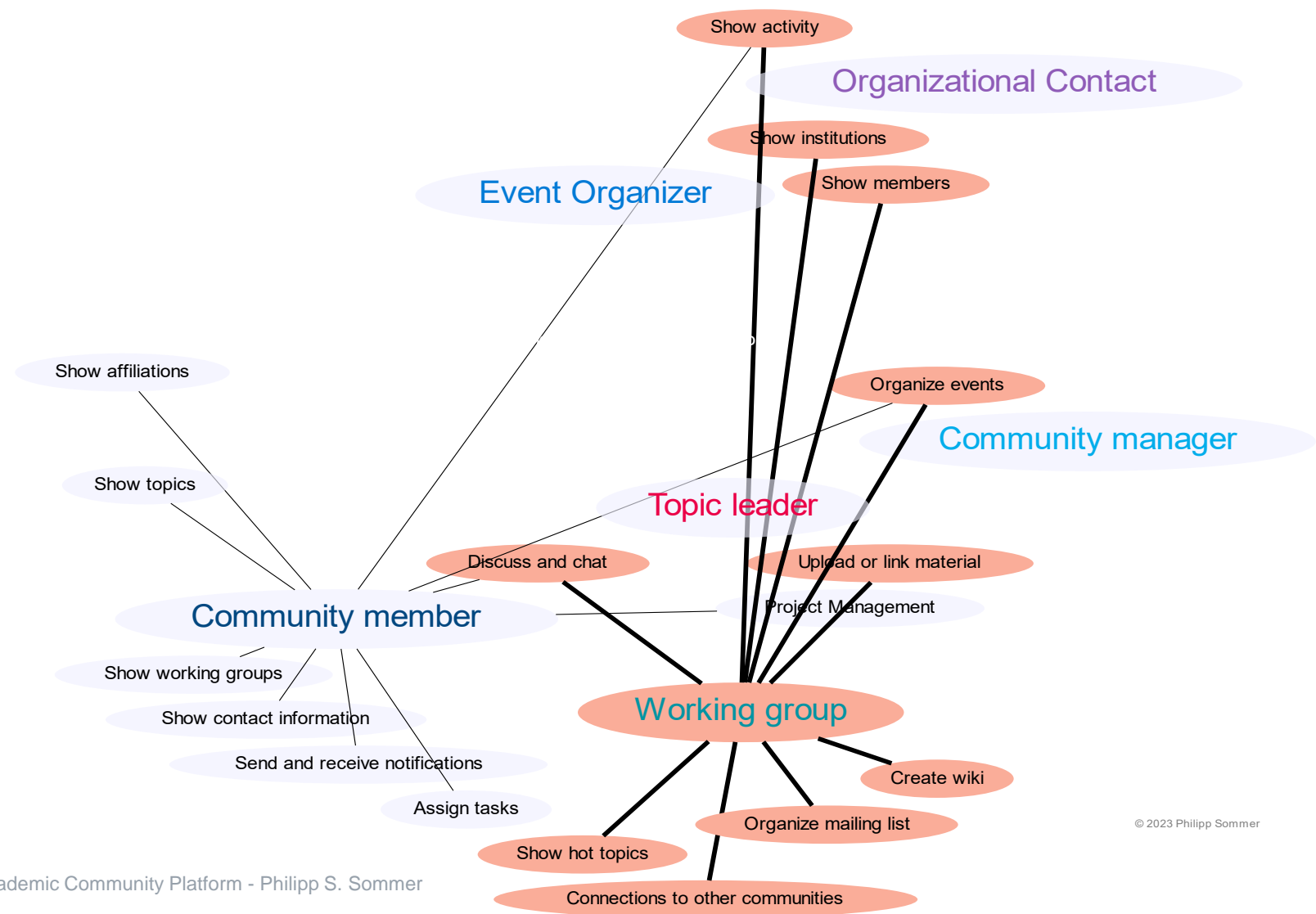


Community roles

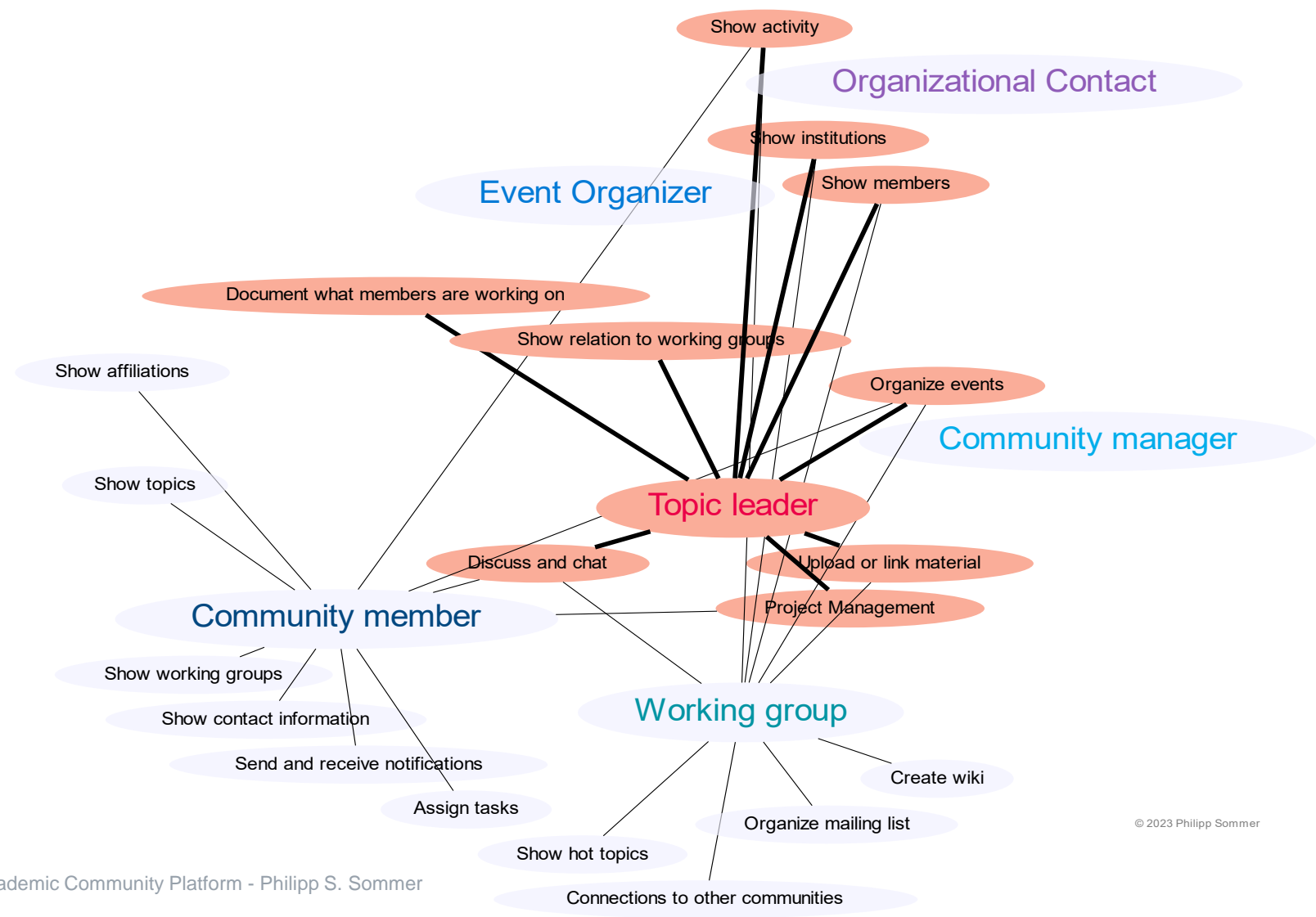


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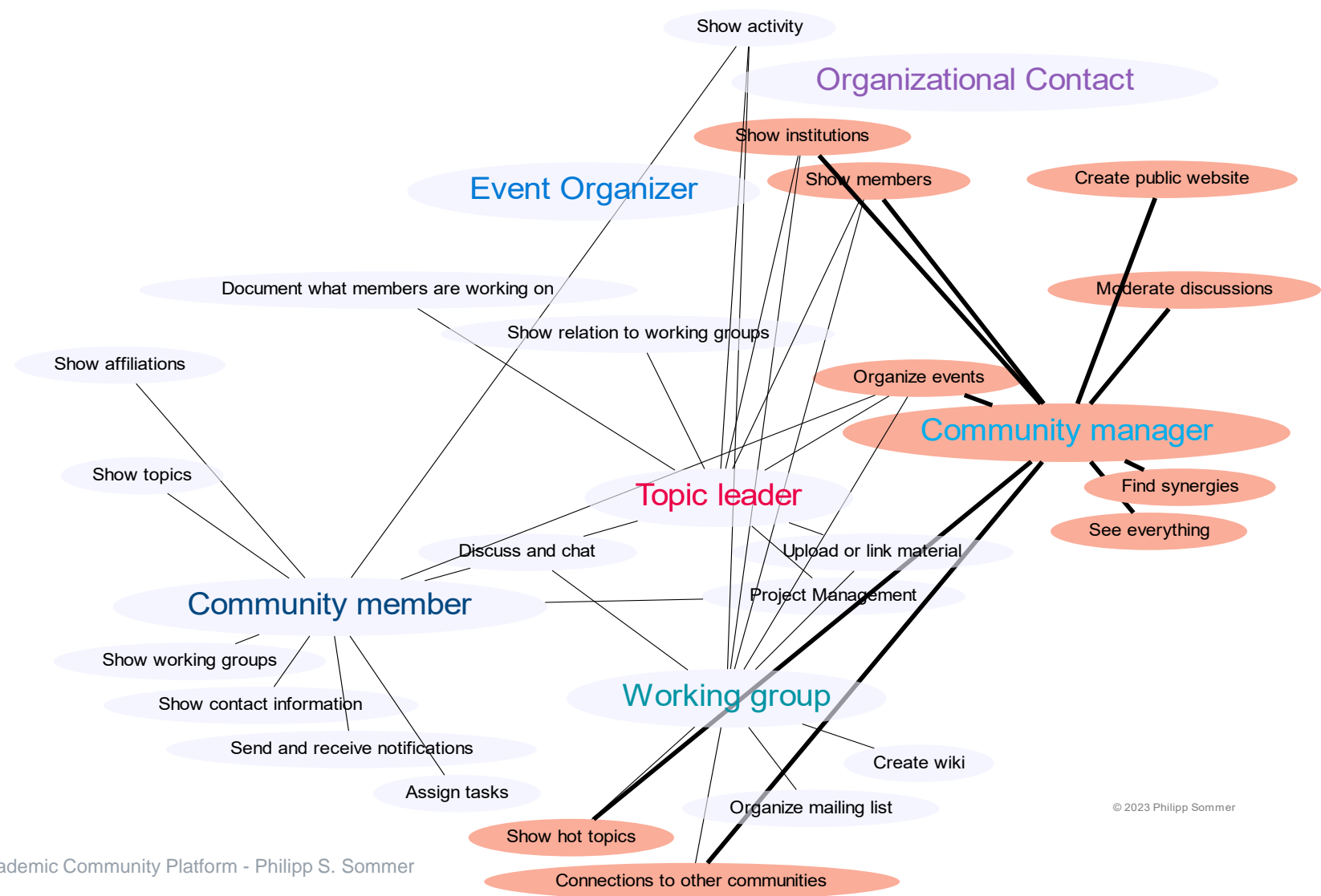
Community roles



Community roles

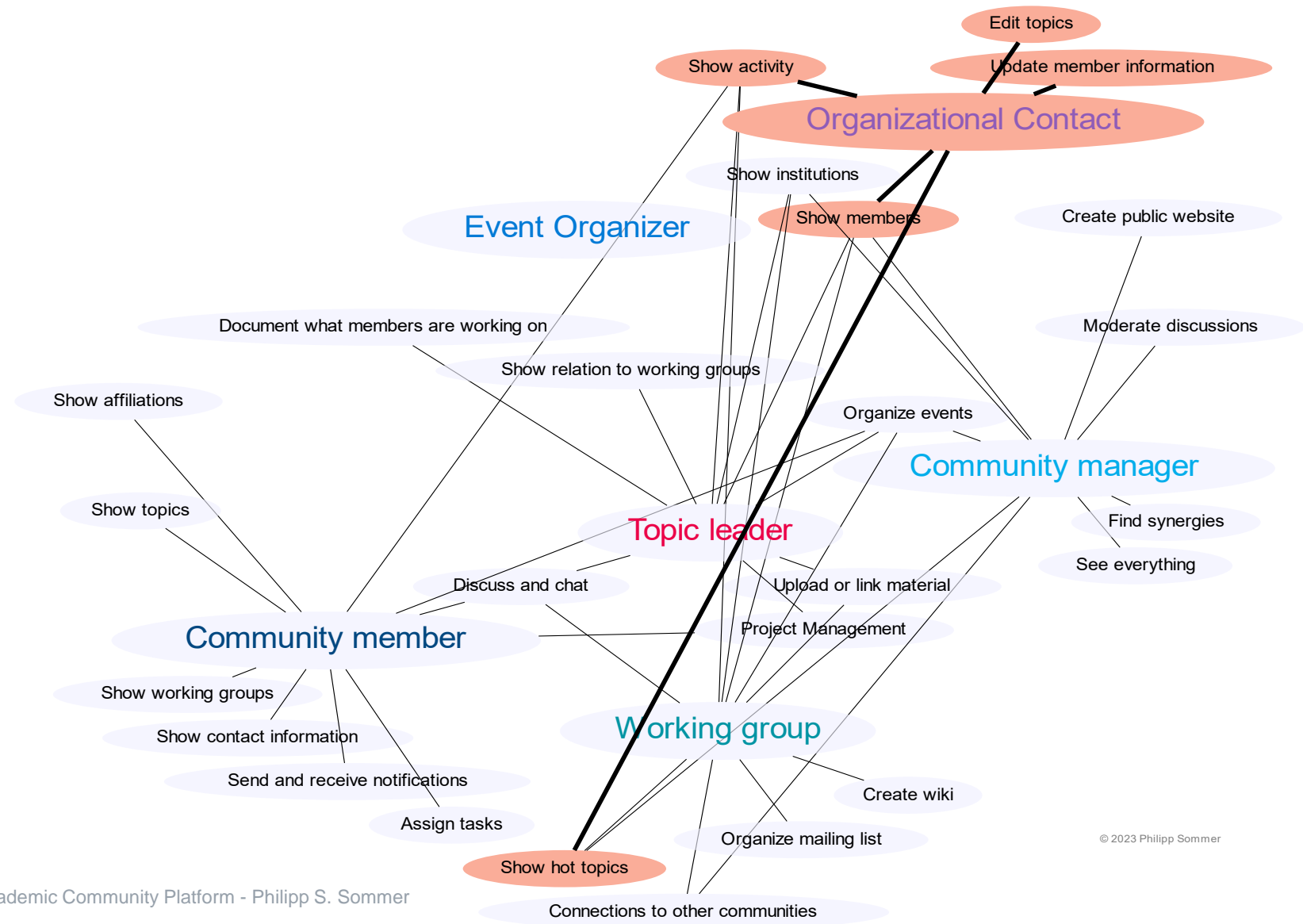


Community roles



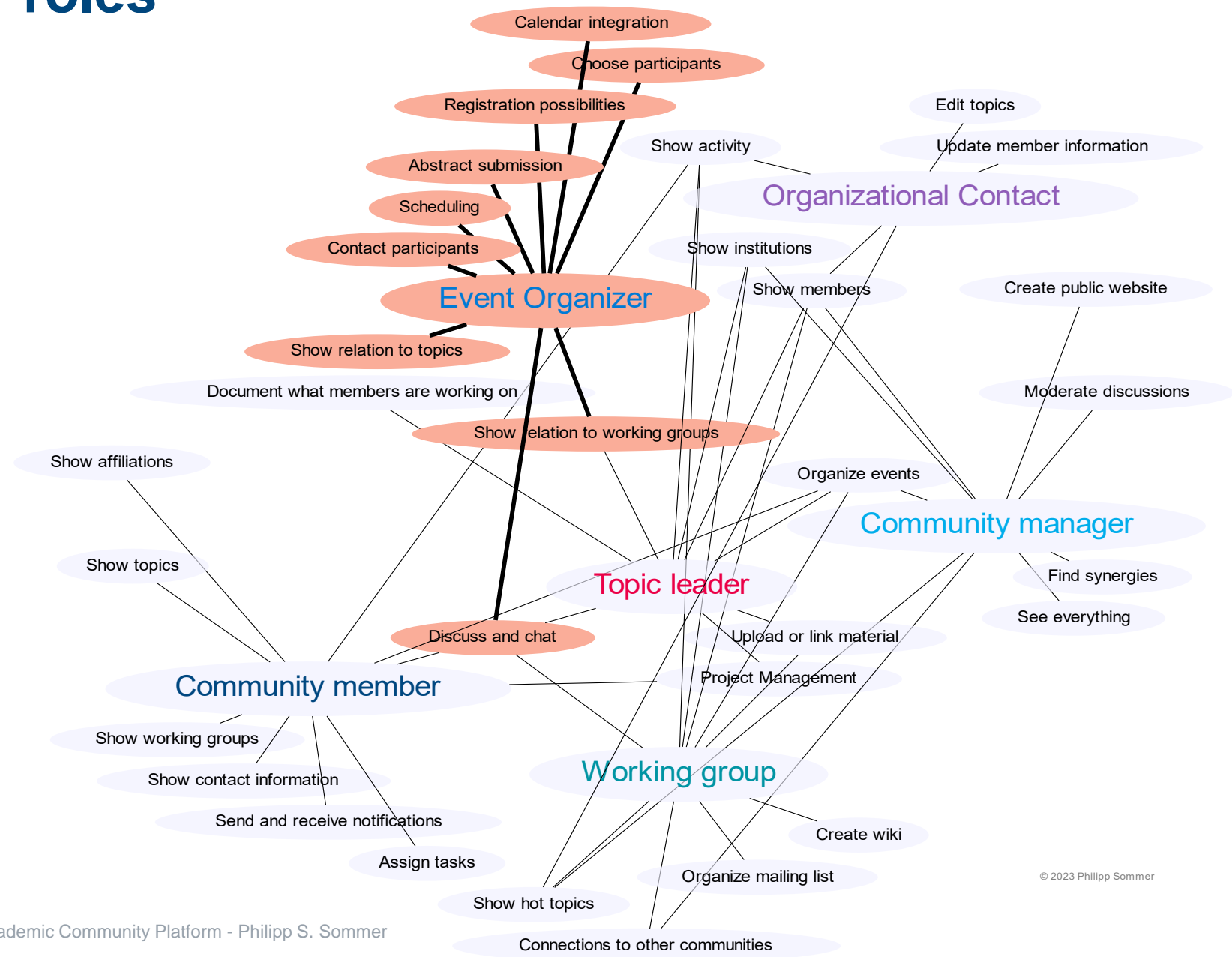
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Community roles



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Community roles



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Community roles



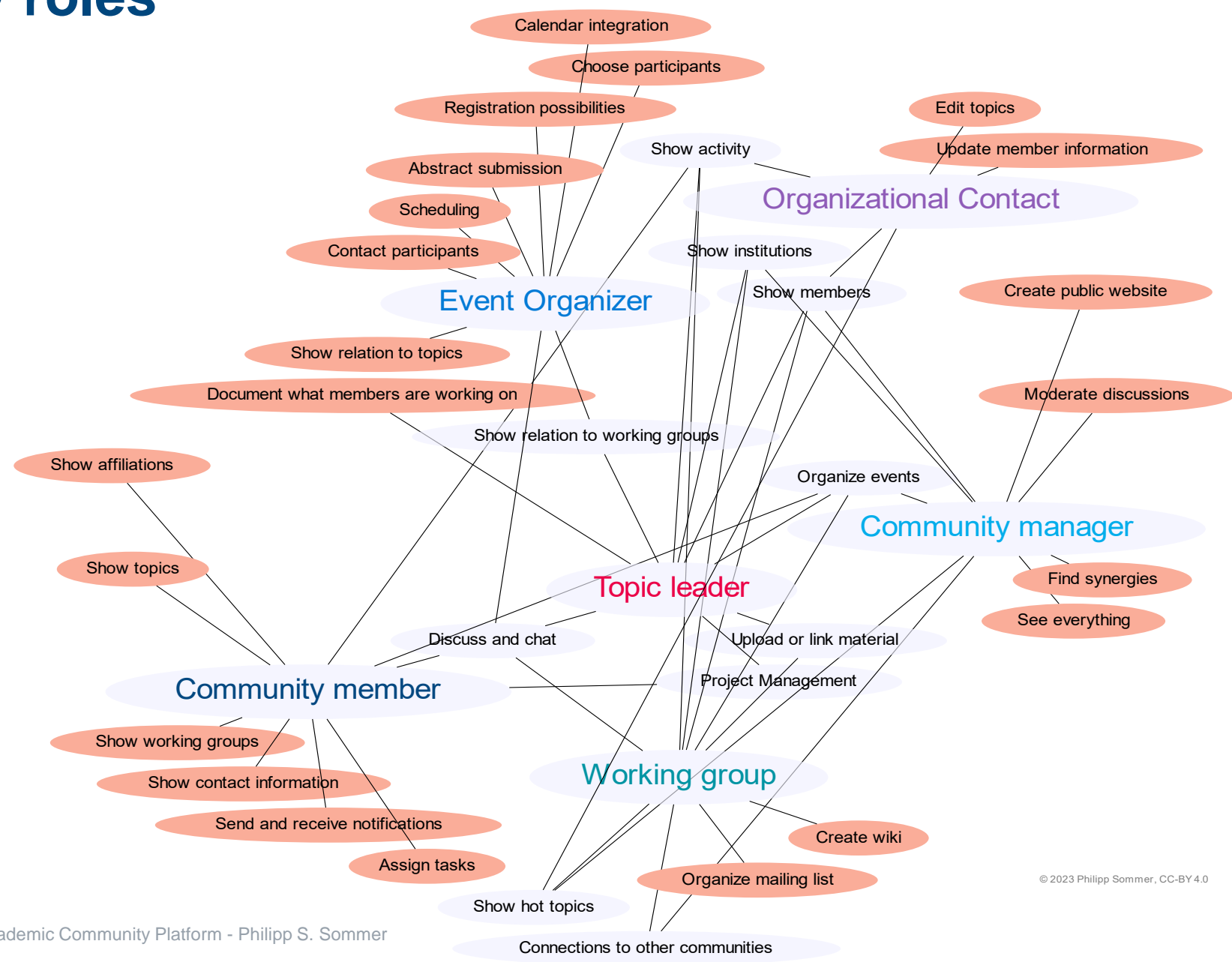
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Community roles



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Community roles



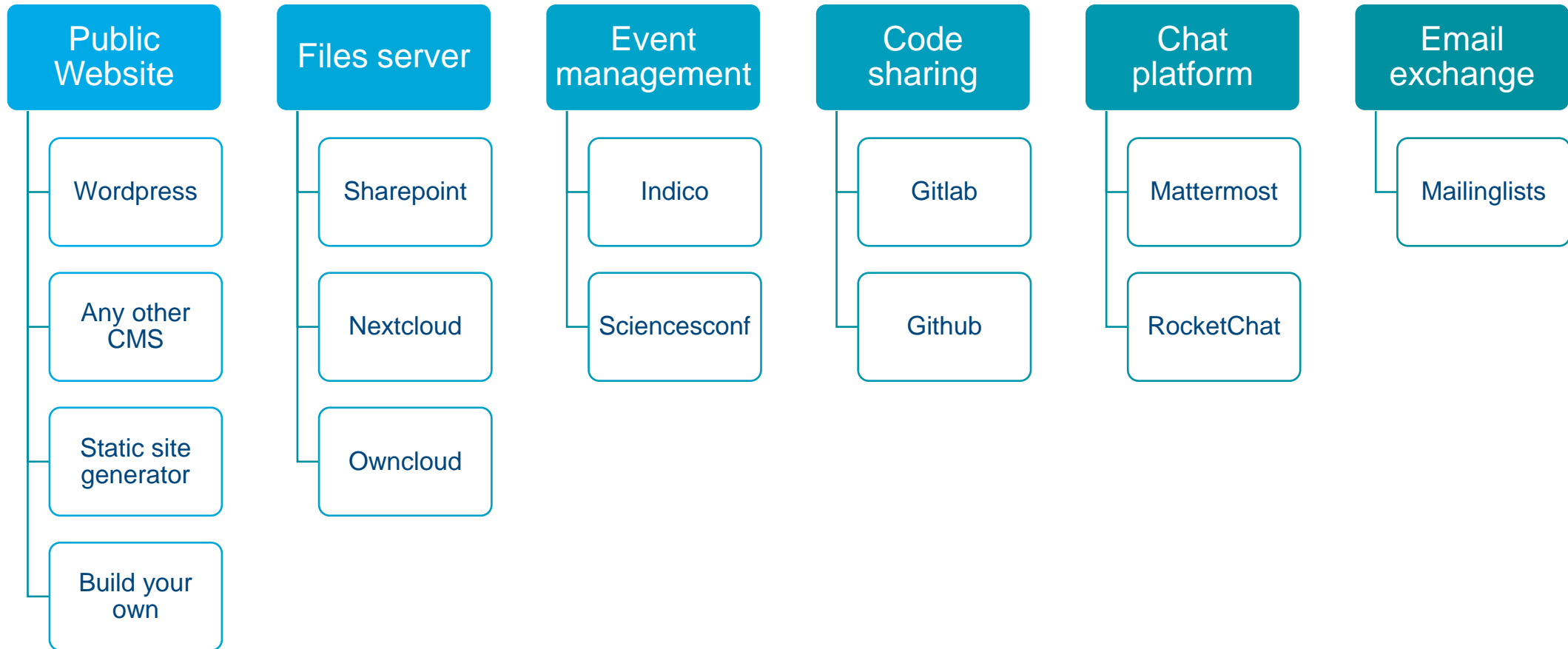
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Community Tools



Collaboration
Tools

What we need tools for

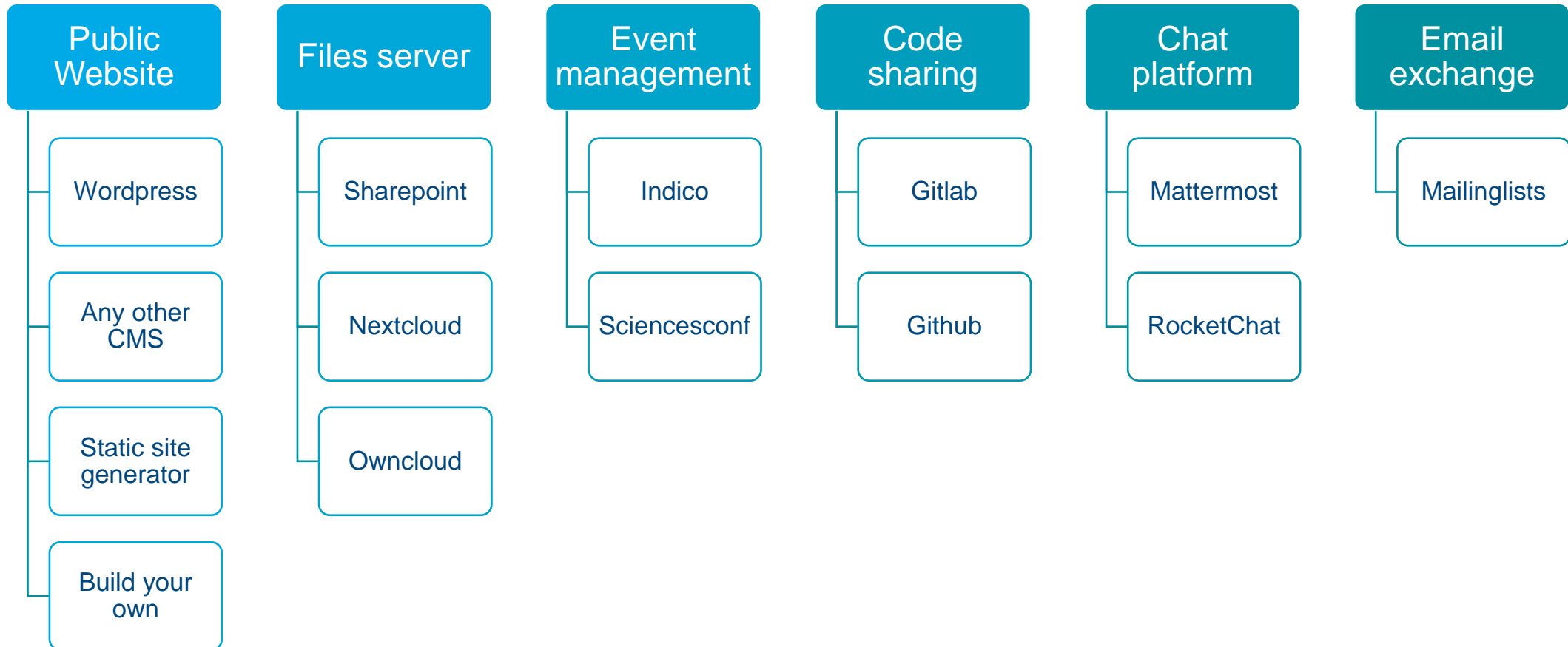


Challenges for these Tools

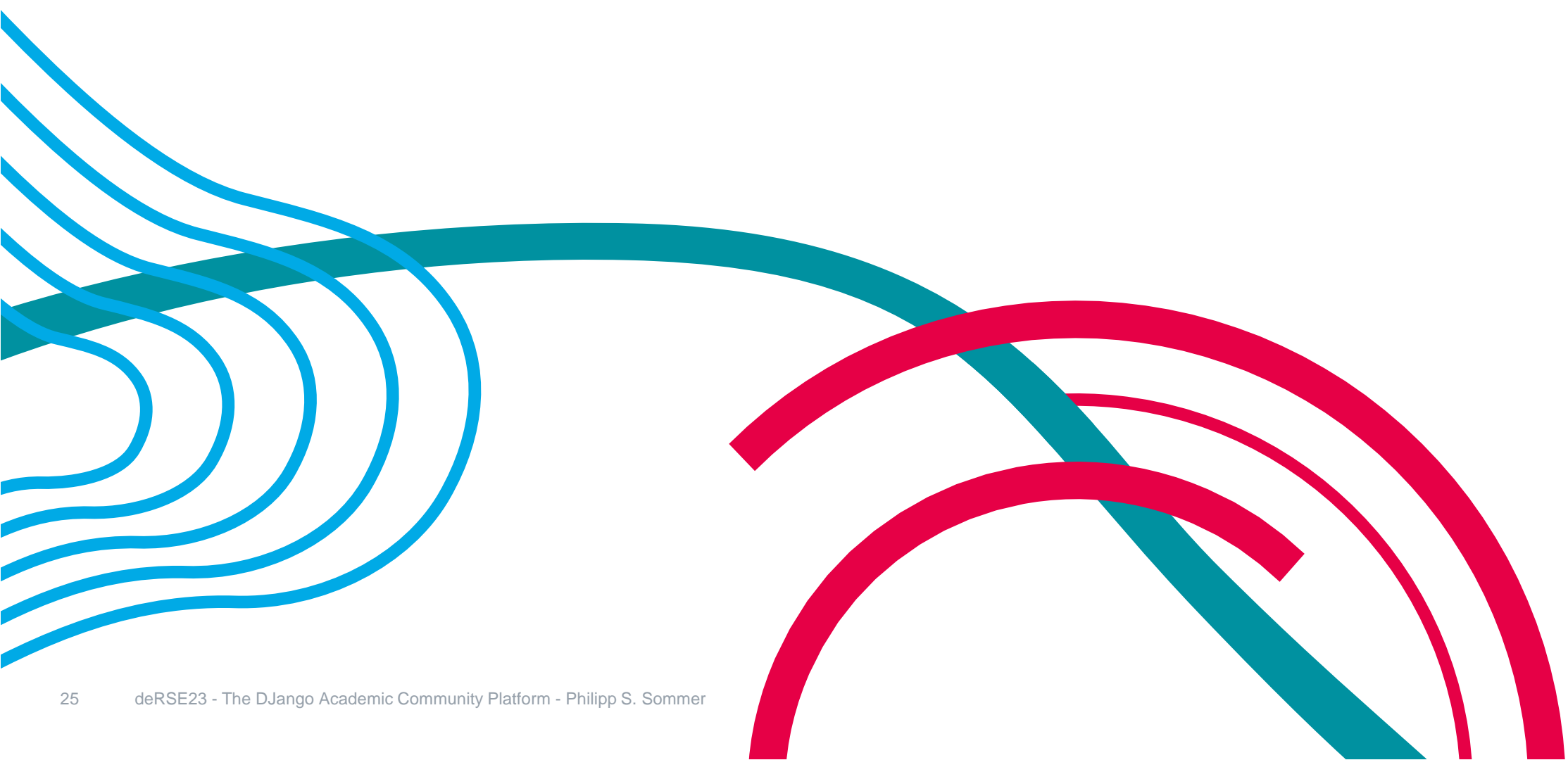
| | |
|-------------------------|---|
| Member related | People come and people go |
| Working Groups related | Working Groups start and Working Groups end |
| Topics related | Topics start and topics end |
| Acknowledgement related | People do have affiliations |
| Content related | What again does M2.1 mean? Who does what in the community? |
| Permission related | Flexible internal and external content Who can edit what in the community? |



These are generic tools



Maybe we need... another tool?



The Climate Limited-area Modelling Community

CLM



Scientific Advisory Board (SAB)



CLM-
Community
Coordination

working group
coordination (CO)

AIO

CCAR

CP

CRCS

EVAL

MODEV

SOILVEG

SUPTECH

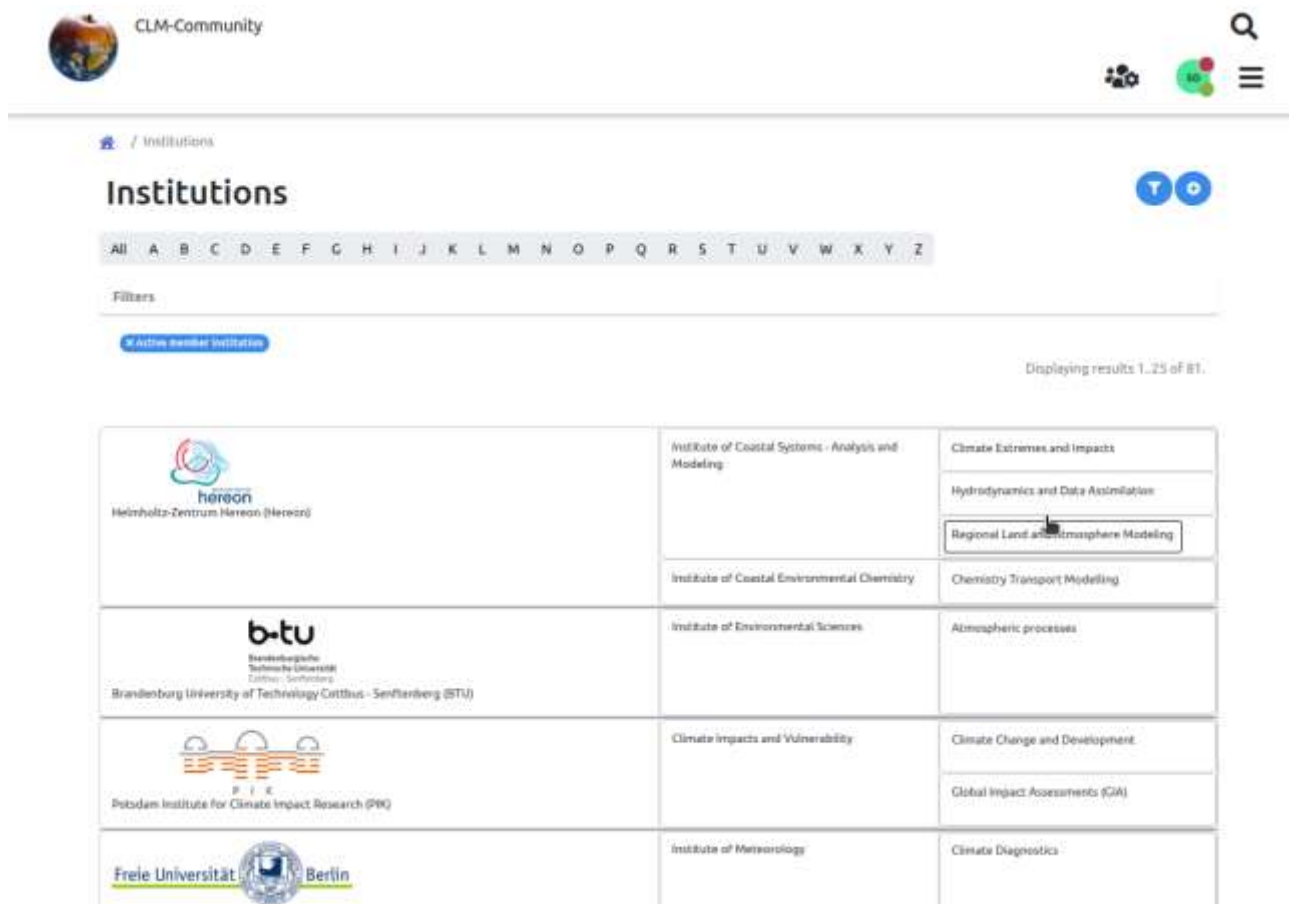
working groups

- Develops and applies the regional climate models COSMO-CLM and ICON-CLM
- Coordinated at DWD and Hereon
- Multiple active and inactive Working Groups and Project Groups
- ~250 members from ~80 international research institutions

www.clm-community.eu



Features of the DJAC-Tool



CLM-Community

/ Institutions





Institutions

All A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Filters

Active member institutions

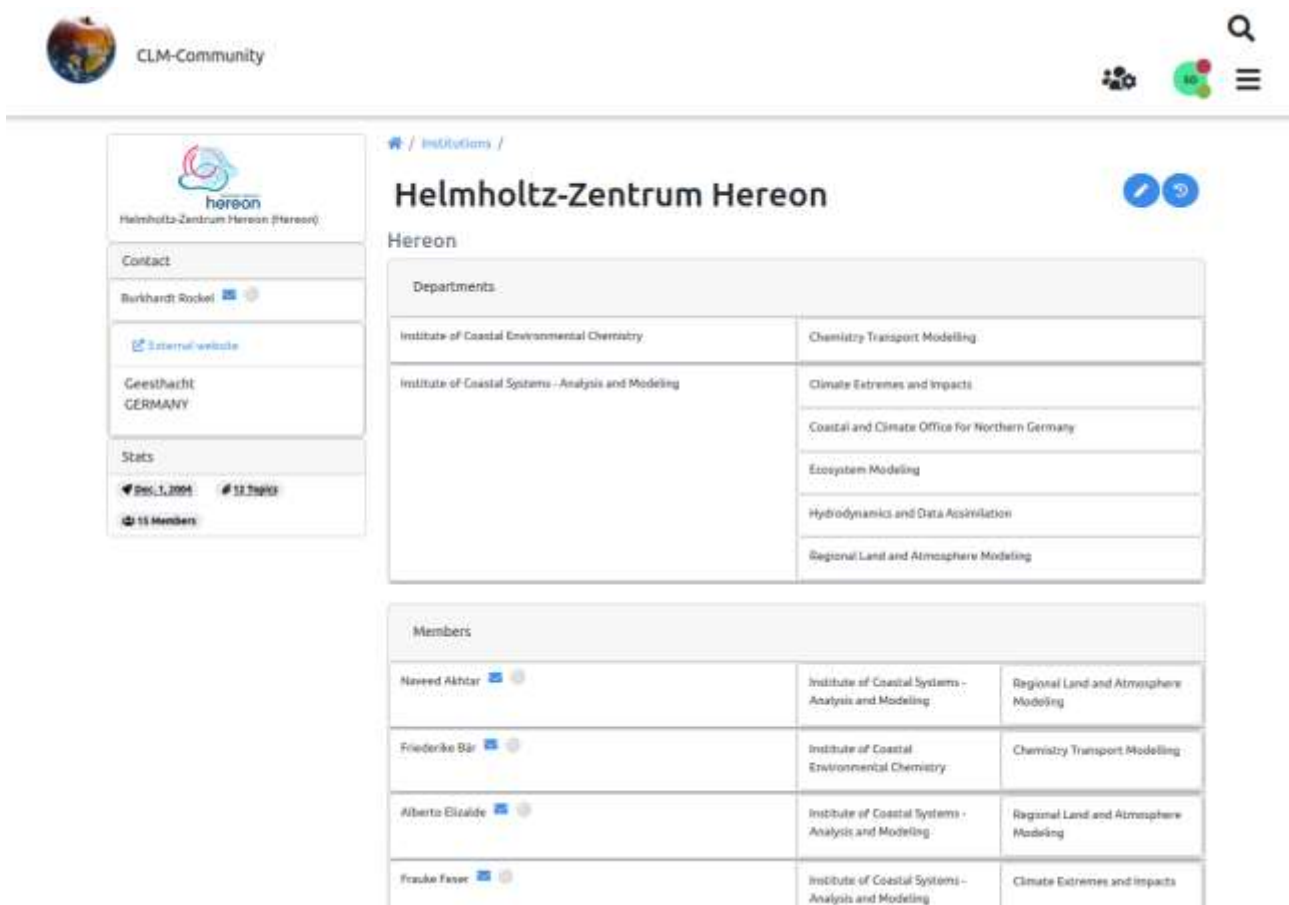
Displaying results 1..25 of 81.

| | | |
|---|--|-------------------------------------|
|  hereon Helmholtz-Zentrum Hereon (Hereon) | Institute of Coastal Systems - Analysis and Modeling | Climate Extremes and Impacts |
| | | Hydrodynamics and Data Assimilation |
| | | Regional Land-atmosphere Modeling |
|  b-tu Brandenburgische Technische Universität Cottbus - Senftenberg | Institute of Coastal Environmental Chemistry | Chemistry Transport Modelling |
| | Institute of Environmental Sciences | Atmospheric processes |
|  PIR Potsdam Institute for Climate Impact Research (PIR) | Climate Impacts and Vulnerability | Climate Change and Development |
| | | Global Impact Assessments (GIA) |
|  Freie Universität Berlin | Institute of Meteorology | Climate Diagnostics |

- **Institutions**
 - Keep track of members
 - Keep track of topics
- **Working Groups**
- **Topics**
- **Community Member Profiles**
- **Content Management System**
- **Material Upload**
- **Channels**
- **Events**



Features of the DJAC-Tool



The screenshot displays the DJAC-Tool interface for the Helmholtz-Zentrum Hereon. The top navigation bar includes the CLM-Community logo, a search icon, and a menu icon. The main content area is divided into a left sidebar and a main panel. The sidebar contains the Hereon logo, contact information for Burkhardt Rockel, an external website link, the location Geesthacht GERMANY, and statistics showing 12 topics and 15 members. The main panel features the title 'Helmholtz-Zentrum Hereon' and a 'Departments' table. Below the departments is a 'Members' table listing four individuals with their affiliations.

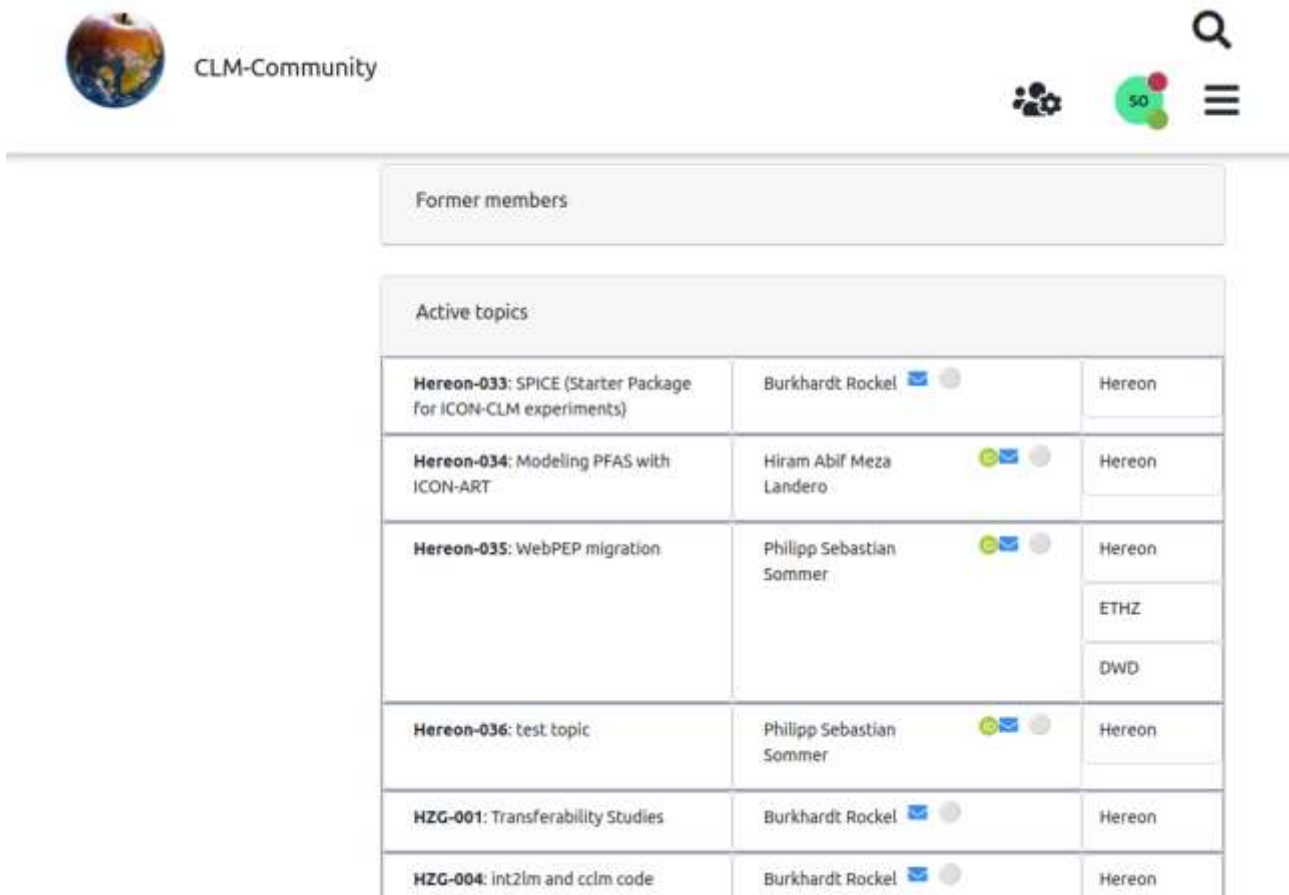
| Departments | | |
|--|---|--|
| Institute of Coastal Environmental Chemistry | Chemistry Transport Modelling | |
| Institute of Coastal Systems - Analysis and Modeling | Climate Extremes and Impacts | |
| | Coastal and Climate Office for Northern Germany | |
| | Ecosystem Modeling | |
| | Hydrodynamics and Data Assimilation | |
| Regional Land and Atmosphere Modeling | | |

| Members | | |
|------------------|--|---------------------------------------|
| Naveed Akhtar | Institute of Coastal Systems - Analysis and Modeling | Regional Land and Atmosphere Modeling |
| Friederike Bär | Institute of Coastal Environmental Chemistry | Chemistry Transport Modelling |
| Alberto Elizalde | Institute of Coastal Systems - Analysis and Modeling | Regional Land and Atmosphere Modeling |
| Frauke Feyer | Institute of Coastal Systems - Analysis and Modeling | Climate Extremes and Impacts |

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Features of the DJAC-Tool

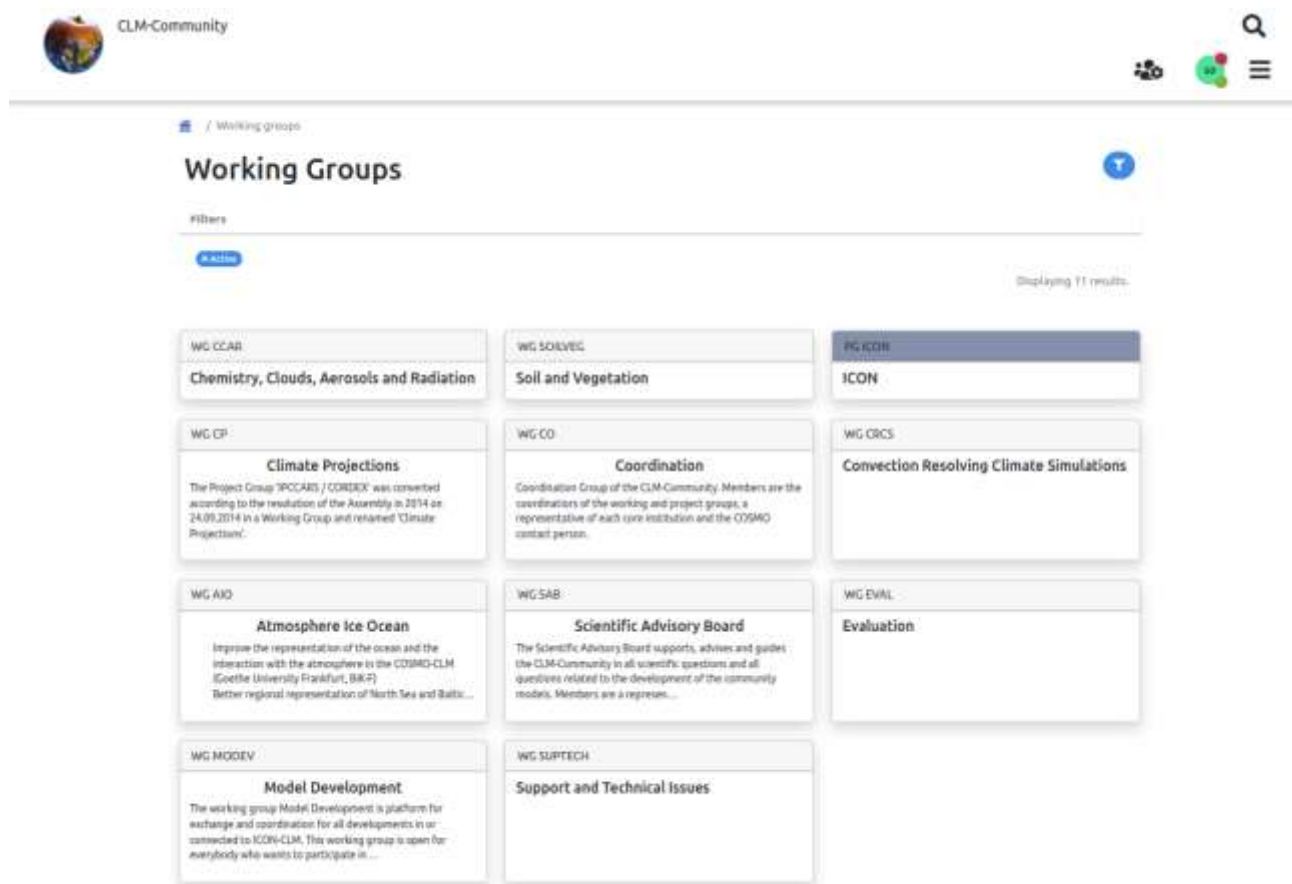


| Former members | | |
|--|--------------------------|--------|
| Active topics | | |
| Hereon-033: SPICE (Starter Package for ICON-CLM experiments) | Burkhardt Rockel | Hereon |
| Hereon-034: Modeling PFAS with ICON-ART | Hiram Abif Meza Landero | Hereon |
| Hereon-035: WebPEP migration | Philipp Sebastian Sommer | Hereon |
| | | ETHZ |
| | | DWD |
| Hereon-036: test topic | Philipp Sebastian Sommer | Hereon |
| HZG-001: Transferability Studies | Burkhardt Rockel | Hereon |
| HZG-004: Int2Im and cclm code | Burkhardt Rockel | Hereon |

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Features of the DJAC-Tool



- Institutions
- **Working Groups**
 - Keep track of members
 - Keep track of topics
 - Mailing list integration
- Topics
- Community Member Profiles
- Content Management System
- Material Upload
- Channels
- Events



Features of the DJAC-Tool

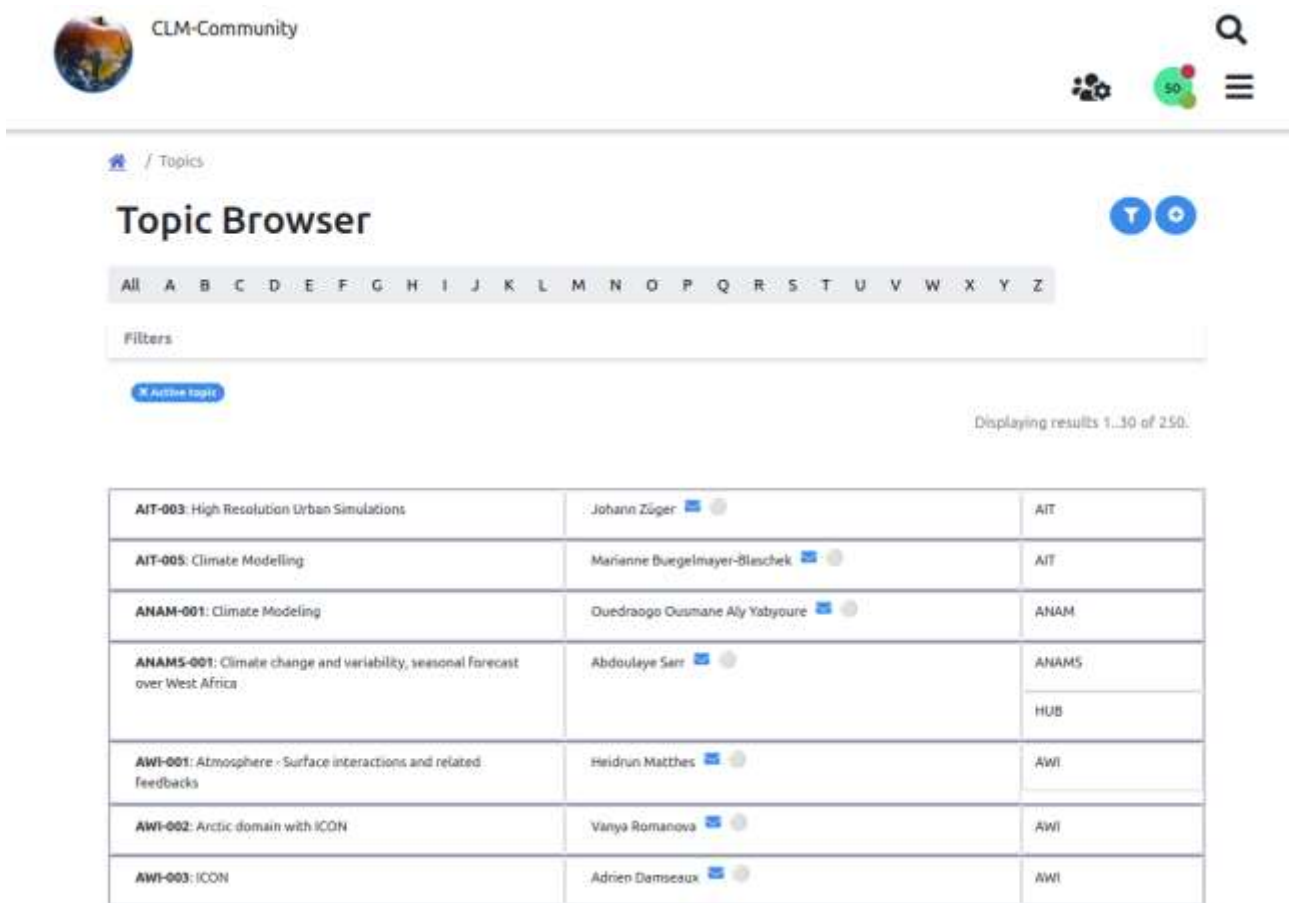
The screenshot displays the DJAC-Tool interface for the 'Climate Projections' working group. The top navigation bar includes the 'CLM-Community' logo, a search icon, and a menu icon. The left sidebar contains sections for 'Leader' (Hendrik Feldmann), 'Stats' (Oct 5, 2009, 27 Topics, 73 Members), 'Working group channels' (View all channels), and 'Working group material' (All material, Add material). The main content area shows the 'Climate Projections' title, a description of the group's origin, and a 'Members' section. Below this is a table of 'Active topics' with columns for topic ID, title, author, and institution.

| Active topics | | | |
|---------------|--|-----------------|-------|
| ANAMS-001 | Climate change and variability, seasonal forecast over West Africa | Abdoulaye Sarr | ANAMS |
| | | | HUB |
| AWI-002 | Arctic domain with ICON | Vanya Romanova | AWI |
| AWI-003 | ICON | Adrien Damseaux | AWI |
| AWI-004 | AWI-Arctic | Ines Hebestadt | AWI |
| BTU-010 | Analysis of regional climate scenarios for Europe | Klaus Keuler | BTU |
| BTU-015 | Convection-permitting regional climate model simulations | Nadja Samtleben | BTU |

- Institutions
- **Working Groups**
 - Keep track of members
 - Keep track of topics
 - Mailing list integration
- Topics
- Community Member Profiles
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Features of the DJAC-Tool



The screenshot shows the 'Topic Browser' interface of the DJAC-Tool. At the top, there is a 'CLM-Community' logo and a search bar. Below the search bar, there are navigation icons for 'Topics', 'Working Groups', and 'Institutions'. The 'Topics' section is active, showing a list of topics. The topics are displayed in a table with columns for topic ID, topic name, and institution. The topics listed are:

| Topic ID | Topic Name | Institution |
|-----------|--|-------------|
| AIT-003 | High Resolution Urban Simulations | AIT |
| AIT-005 | Climate Modelling | AIT |
| ANAM-001 | Climate Modeling | ANAM |
| ANAMS-001 | Climate change and variability, seasonal forecast over West Africa | ANAMS |
| AWI-001 | Atmosphere - Surface interactions and related feedbacks | AWI |
| AWI-002 | Arctic domain with ICON | AWI |
| AWI-003 | ICON | AWI |

- Institutions
- Working Groups
- **Topics**
 - Provide description and keywords
 - Set relations to other topics, WGs
 - Keep track of members
- Community Member Profiles
- Content Management System
- Material Upload
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Features of the DJAC-Tool

The screenshot displays the DJAC-Tool interface. At the top, there's a header with the 'CLM-Community' logo and a search icon. The main content area shows a topic titled 'WebPEP migration' under the category 'Hereon-035'. The topic description states: 'WebPEP is currently hosted at Hereon via https://tools.clm-community.eu/web_pep/gul/web_pep.php and is frozen at EXTPAR-5.2.1. We aim to migrate this to a different computing center (e.g. the DKRZ) and host it through the CLM-Community website at <https://hcdc.hereon.de/clm-community>.' Below the description is a 'Team' table listing members and their affiliations.

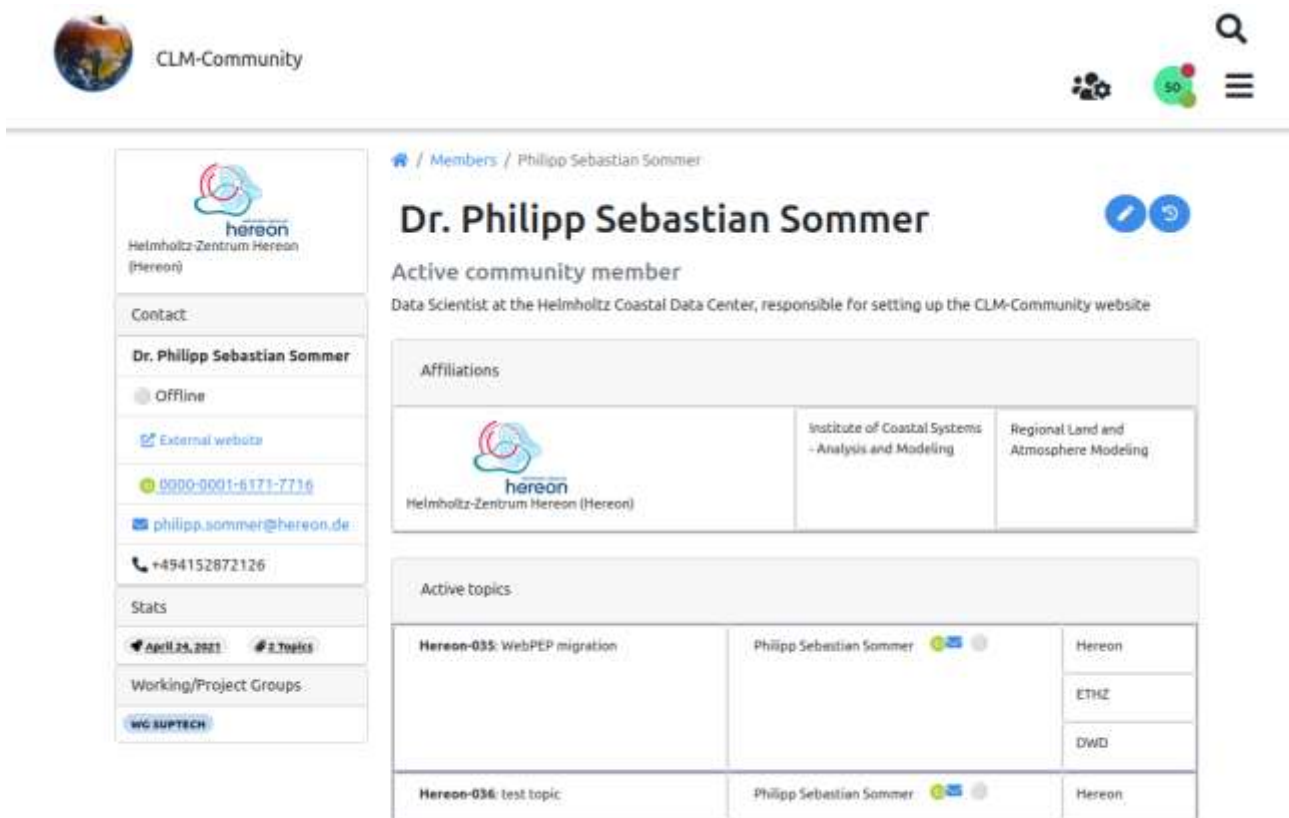
| Team | |
|--------------------------|--|
| Jonas Jucker | Federal Institute of Technology of Zurich (ETHZ) |
| Burkhardt Rockel | Helmholtz-Zentrum Hereon (Hereon) |
| Philipp Sebastian Sommer | Helmholtz-Zentrum Hereon (Hereon) |
| Christian Steger | Deutscher Wetterdienst (DWD) |
| Philipp Sommer | |

Below the team table is a 'Simulation Details' section. On the left sidebar, there are logos for 'hereon', 'ETH zürich', and 'DWD', along with a 'Leader' section for Philipp Sebastian Sommer, 'Stats' for Feb. 11, 2022, '5 Members', 'Collaborations', and 'WE SUPTECH'.


- Institutions
- Working Groups
- **Topics**
 - Provide description and keywords
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Features of the DJAC-Tool



The screenshot displays the DJAC-Tool interface. At the top left is the 'CLM-Community' logo. The main header shows the user's profile: 'Dr. Philipp Sebastian Sommer', an 'Active community member', and a bio: 'Data Scientist at the Helmholtz Coastal Data Center, responsible for setting up the CLM-Community website'. The profile includes a sidebar with contact information (email, phone, external website), stats (last seen, topics), and working/project groups. The main content area shows 'Affiliations' (Helmholtz-Zentrum Hereon, Institute of Coastal Systems, Regional Land and Atmosphere Modeling) and 'Active topics' (Hereon-035: WebPEP migration, Hereon-036: test topic).

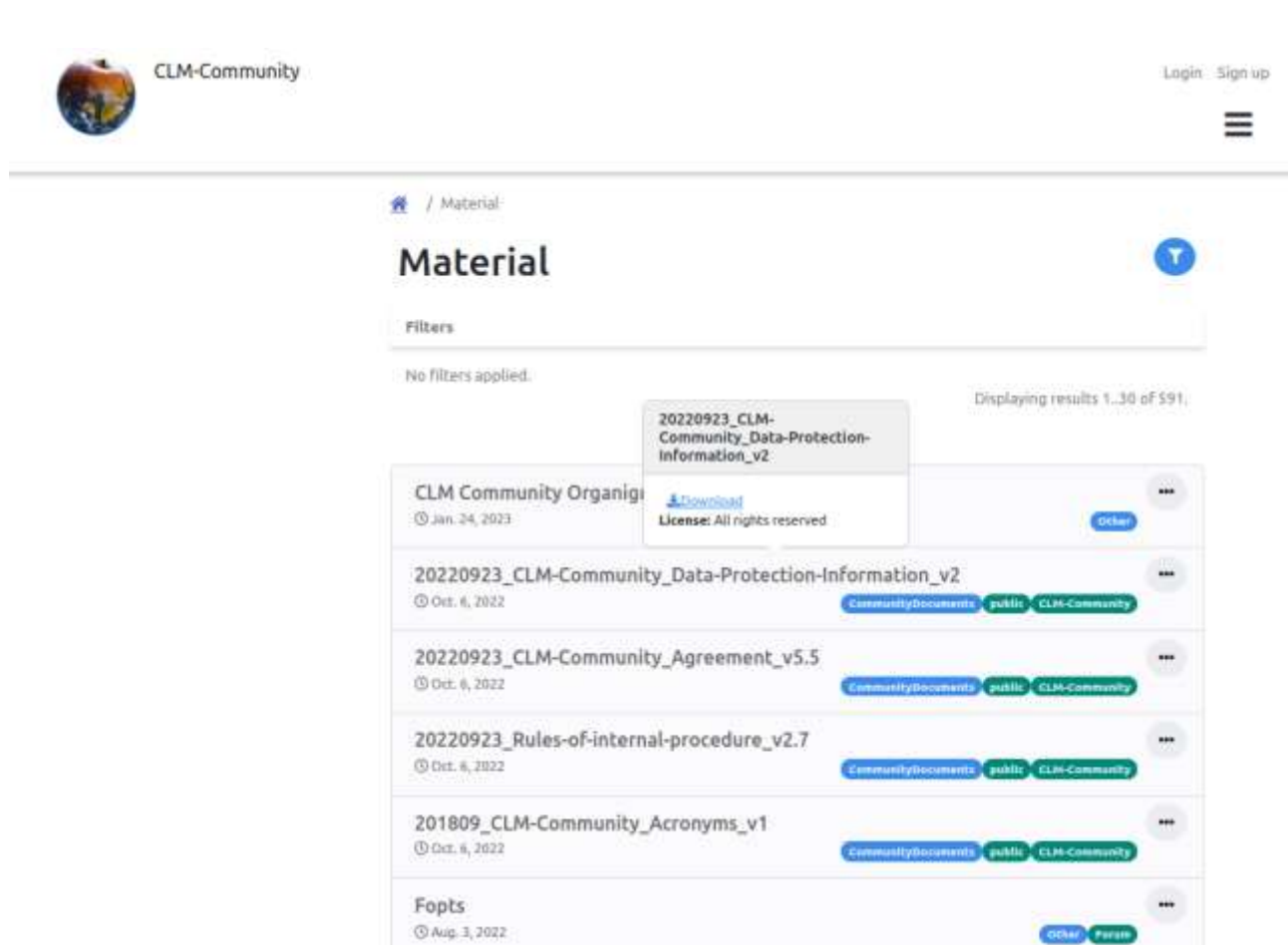
| Affiliations | | |
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| Active topics | | |
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- Institutions
- Working Groups
- Topics
- **Community Member Profiles**
 - Keep track of roles
 - Keep track of topics
 - Keep track of affiliations
- Material Upload
- Channels
- Events
- Content Management System



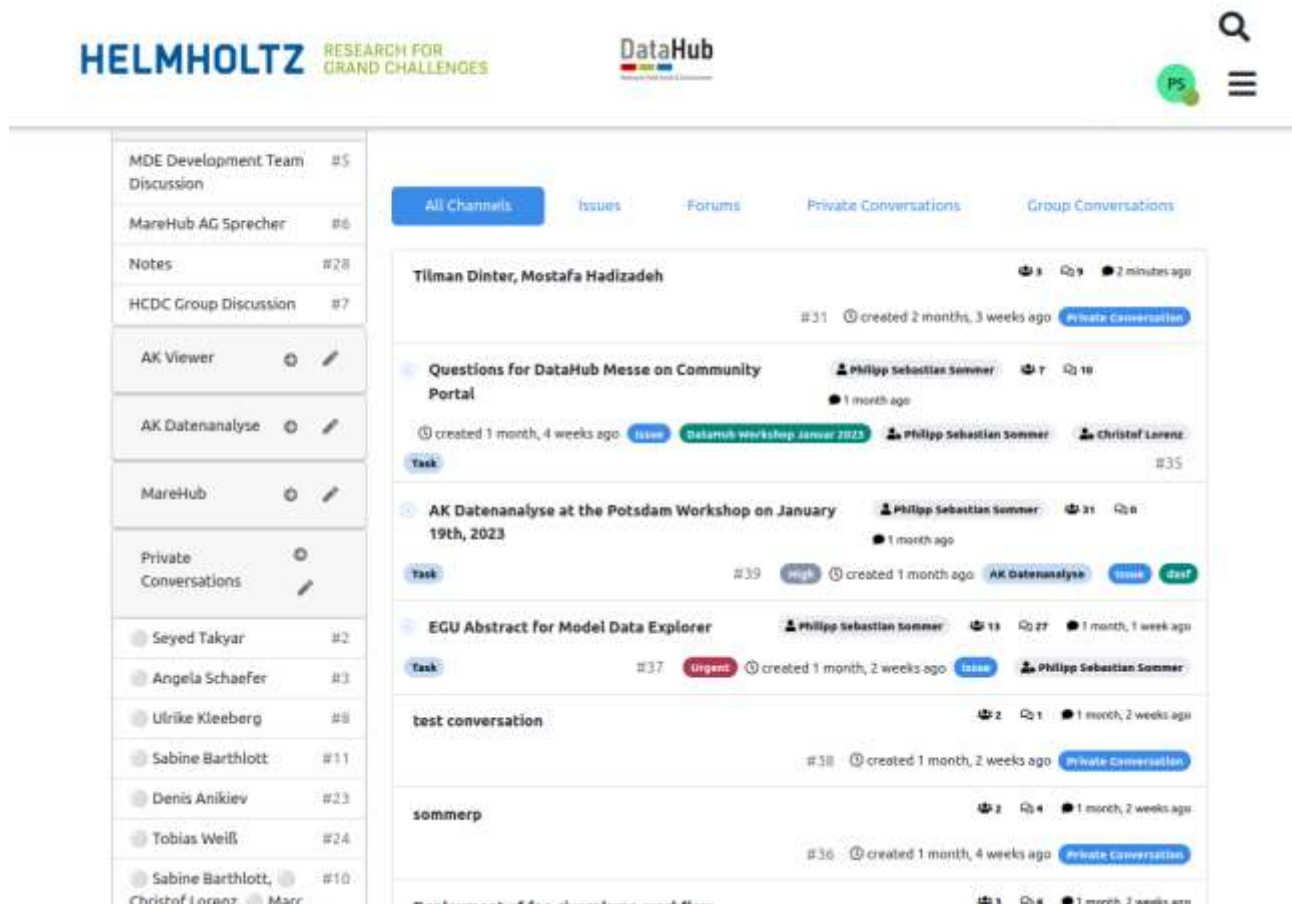
Features of the DJAC-Tool



- Institutions
- Working Groups
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- Community Member Profiles
- **Material Upload**
 - Upload or link material
 - Create relation to WG, Event, Topic, etc.
- Channels
- Events
- Content Management System



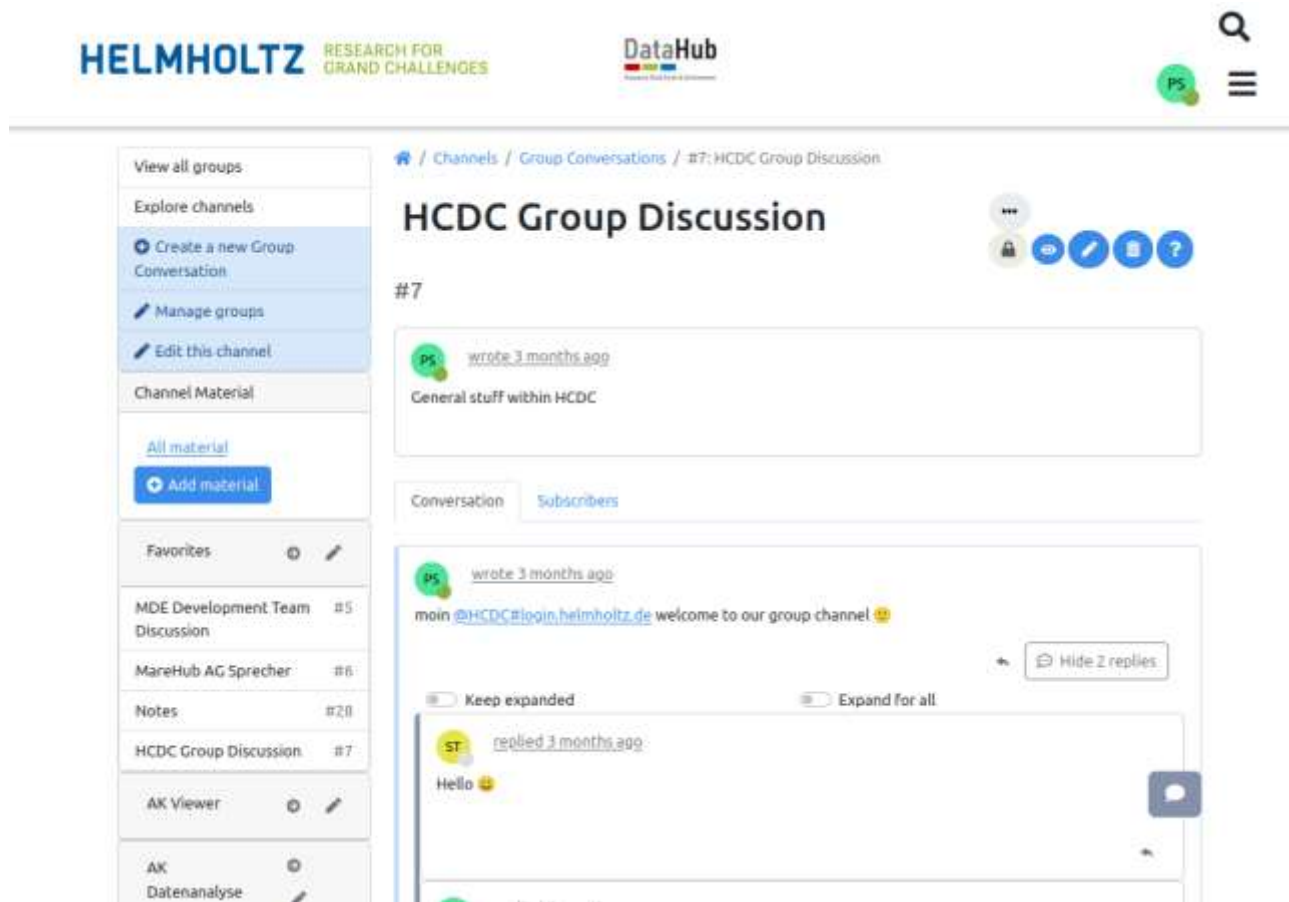
Features of the DJAC-Tool



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- **Channels**
 - Chat within the community
 - Private or group conversations, issues, forum
 - Possibly end-to-end encrypted
 - Autocompletion for community content
- **Events**
- **Content Management System**



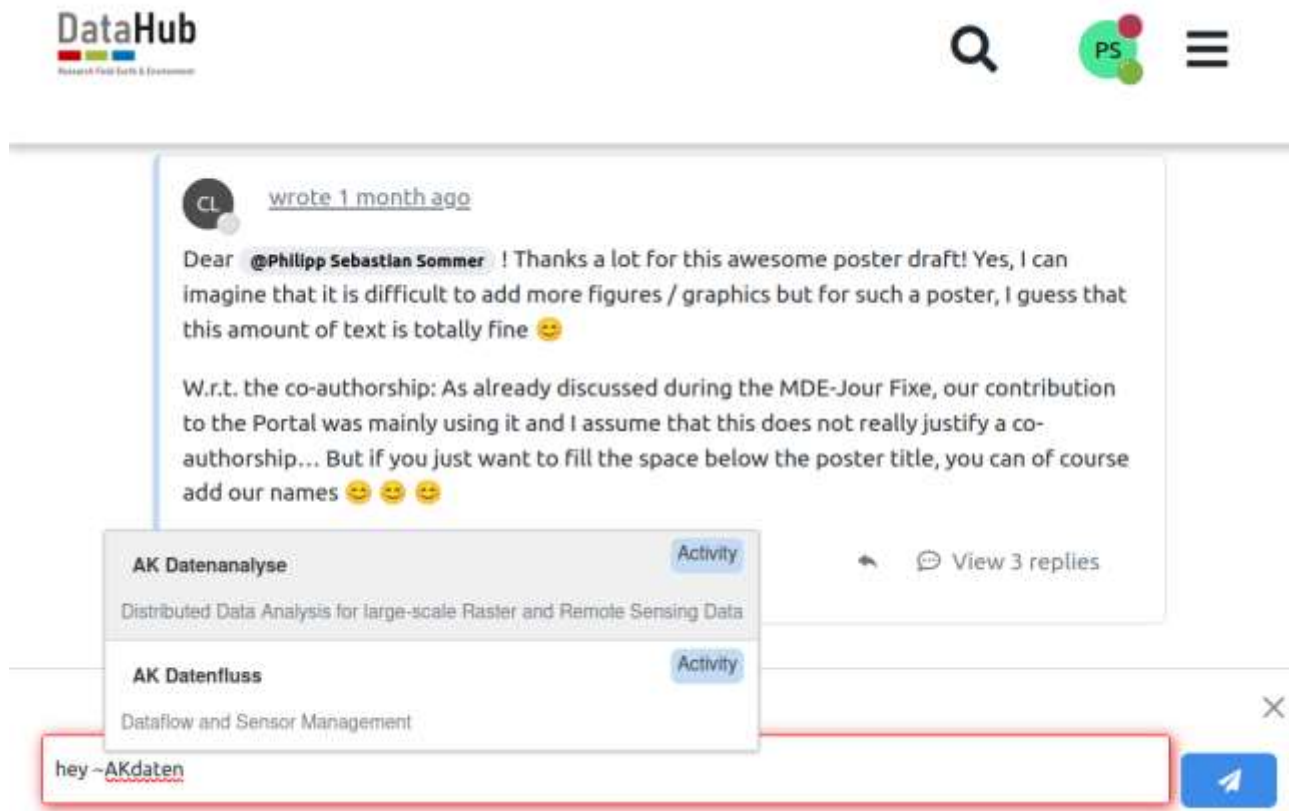
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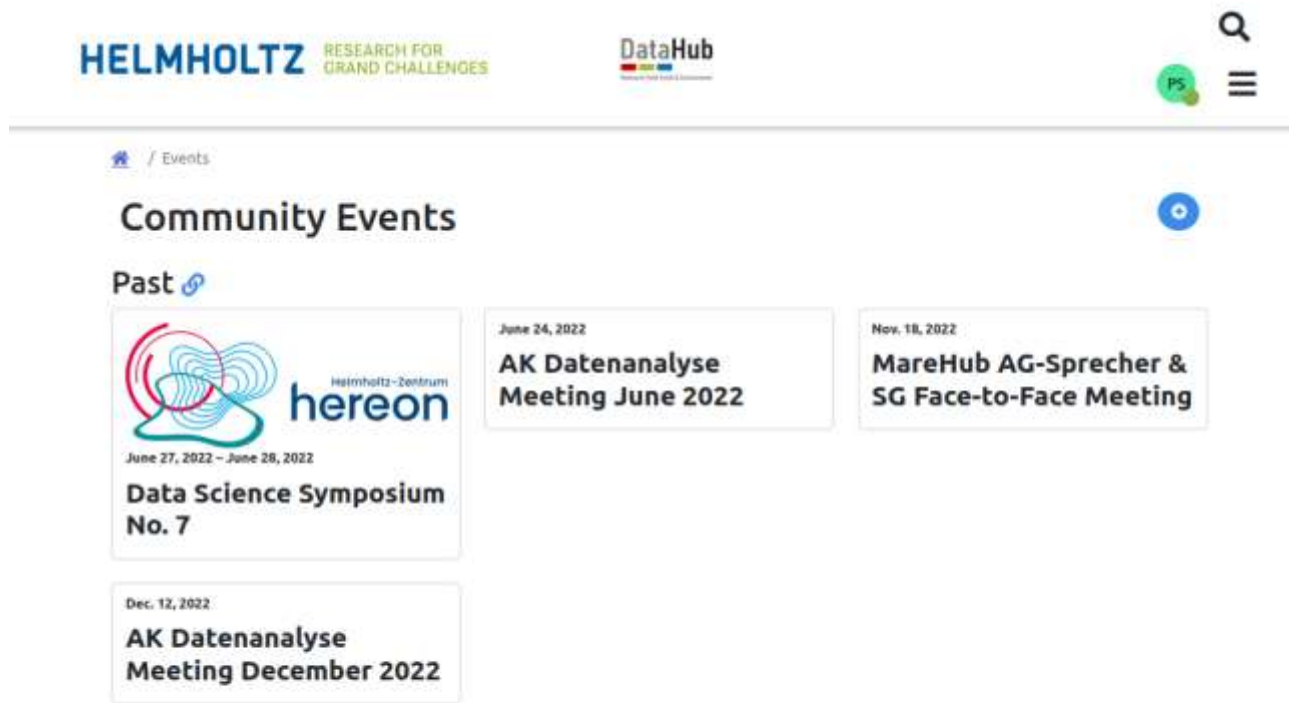
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Features of the DJAC-Tool



- Institutions
- Working Groups
- Topics
- Community Member Profiles
- Material Upload
- Channels
- **Events**
 - Scheduling system
 - Notification system
 - Abstract submission
 - Registration
 - Calendar integration (planned)
- Content Management System



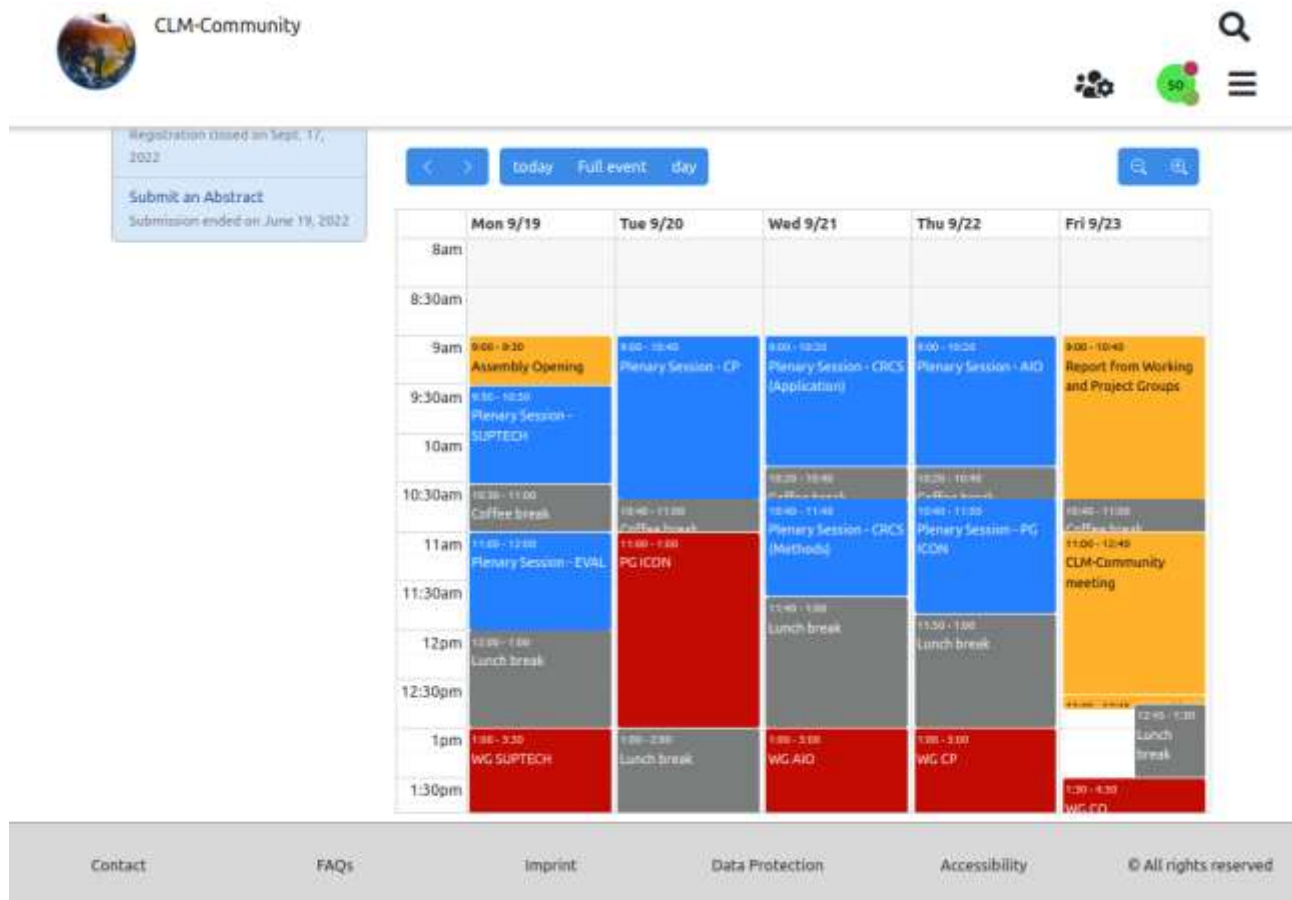
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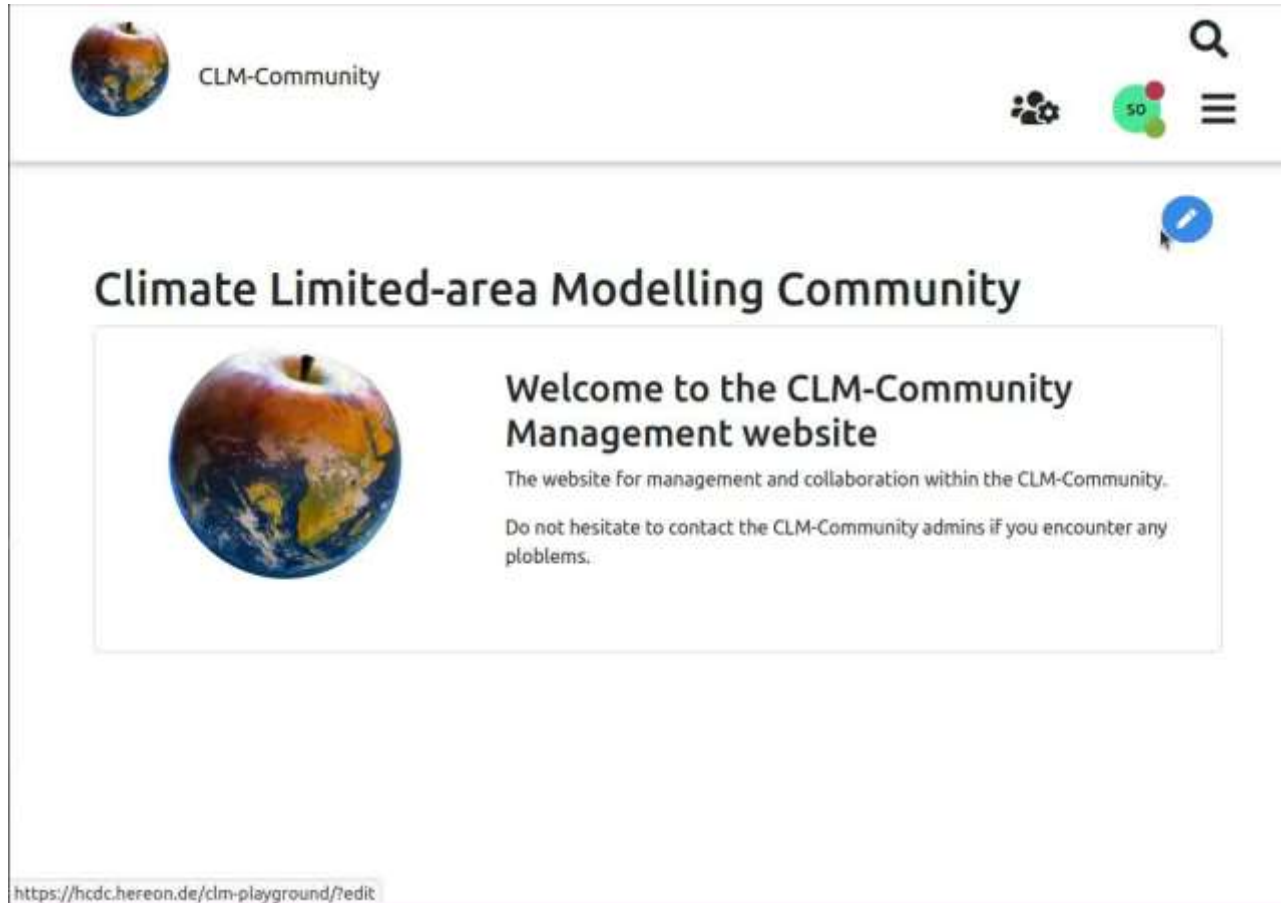
Features of the DJAC-Tool

The screenshot shows the 'Submit Contribution to CLM-Community Assembly 2022' page. On the left is a sidebar with navigation links: 'Event Details', 'Programme', 'Submissions', 'Meeting Rooms', 'View Registrations', 'Edit event properties', 'Edit presentation types', 'Register' (with a note 'Registration closed on Sept. 17, 2022'), and 'Submit an Abstract' (highlighted in blue). The main content area has a breadcrumb trail: 'Events / CLM-Community Assembly 2022 / Submissions / Submit'. Below this is the title 'Submit Contribution to CLM-Community Assembly 2022'. The form includes a 'Title' field (highlighted with a red border), a 'Title of the contribution' label, an 'Abstract' section with a rich text editor (containing a 'Source' button), and a 'Please provide an abstract (max. 4000 characters)' instruction. At the bottom is an 'Other comments' section with a text area.

- Institutions
- Working Groups
- Topics
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- Material Upload
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- **Events**
 - Scheduling system
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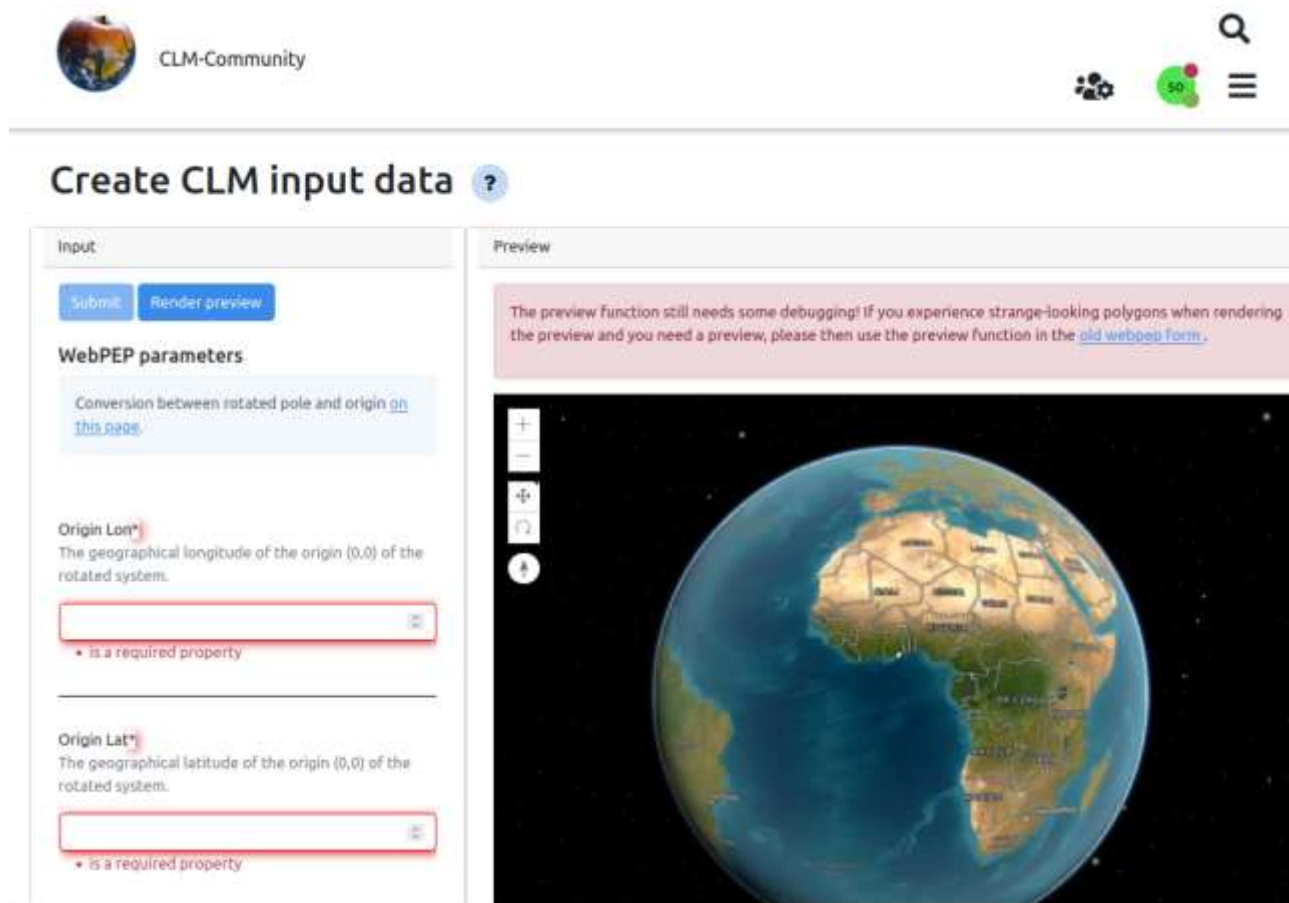
Features of the DJAC-Tool



- Institutions
- Working Groups
- Topics
- Community Member Profiles
- Material Upload
- Channels
- Events
- **Content Management System**
 - Publish generic content (internal or external)
 - Setup your own website structure
 - Reuse items from the website



It can be extended and customized



The screenshot shows the 'Create CLM input data' page of the CLM-Community web application. The page has a header with the CLM-Community logo and navigation icons. The main content is divided into two panels: 'Input' and 'Preview'.

Input Panel:

- Buttons: 'Submit' and 'Render preview'.
- Section: 'WebPEP parameters'.
- Text: 'Conversion between rotated pole and origin [on this page](#)'.
- Field: 'Origin Lon*' with a description 'The geographical longitude of the origin (0,0) of the rotated system.' and a red border indicating it is a required property.
- Field: 'Origin Lat*' with a description 'The geographical latitude of the origin (0,0) of the rotated system.' and a red border indicating it is a required property.

Preview Panel:

- Text: 'The preview function still needs some debugging! If you experience strange-looking polygons when rendering the preview and you need a preview, please then use the preview function in the [old webpep form](#)'.
- Image: A 3D rendering of the Earth showing the continents and oceans, with a coordinate system overlay.

- Integrate HPC resources as remote procedure call via Digital Analytics Software Framework (DASF)
- Serve as an Oauth-Provider for other services
- Add your own Django apps



The current status of the DJAC-Tool

- Under development but already in production for a few communities
- Open-source under EUPL-1.2:
<https://codebase.helmholtz.cloud/hcdc/django/clm-community/django-academic-community/>
- Documentation and user manual needs more work
- Unit tests not yet fully implemented for everything
- UI/UX-Design needs help
- Further functionalities will be implemented thanks to support from the Helmholtz Metadata Collaboration (HMC) project
- A nice-to-have: Federation between Community Portals



Summary

- **Communities in academia follow the same structures although they name things differently**
- **Current established webtools are not able to fully represent the needs and structure of an academic community in the digital world**
- **The DJAC-Tool mimics the structure of an academic community and provides useful features for collaboration, presentation and exchange**



Thank you!

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Pörsch⁴, Linda Baldewein¹, Ulrike Kleeberg¹ for
your inputs and comments on DJAC.

¹ Helmholtz- Zentrum Hereon

² Deutscher Wetterdienst

³ Geomar Helmholtz Centre for Ocean Research

⁴ GeoForschungsZentrum - Helmholtz-Zentrum Potsdam

