



Co-ordination & Harmonisation of Advanced e-Infrastructures

Achieving scale in research communities through e-Infrastructures between Africa and Europe

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For Federico Ruggieri (INFN Roma-III), CHAIN coordinator. Federico.ruggieri@roma3.infn.it
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Research Infrastructures - Grant Agreement n. 260011





Outline

- The CHAIN project objectives
- E-Infrastructures in South Africa
- e-Infrastructure as a means to access Research Infrastructure
- AfricaGrid and CHAIN





Background Hypotheses

- Research requires not only the right tools but the right people, in complex combinations
 - Research infrastructure is efficient when it achieves a critical mass or scale
 - Researchers compete with each other for resources, but
 - some resources are cross-cutting
 - Africa is sparse, both in researchers and in resources
 - The network connects both researchers and resources
 - The coordination of resources can lead to better collaboration of researchers
-

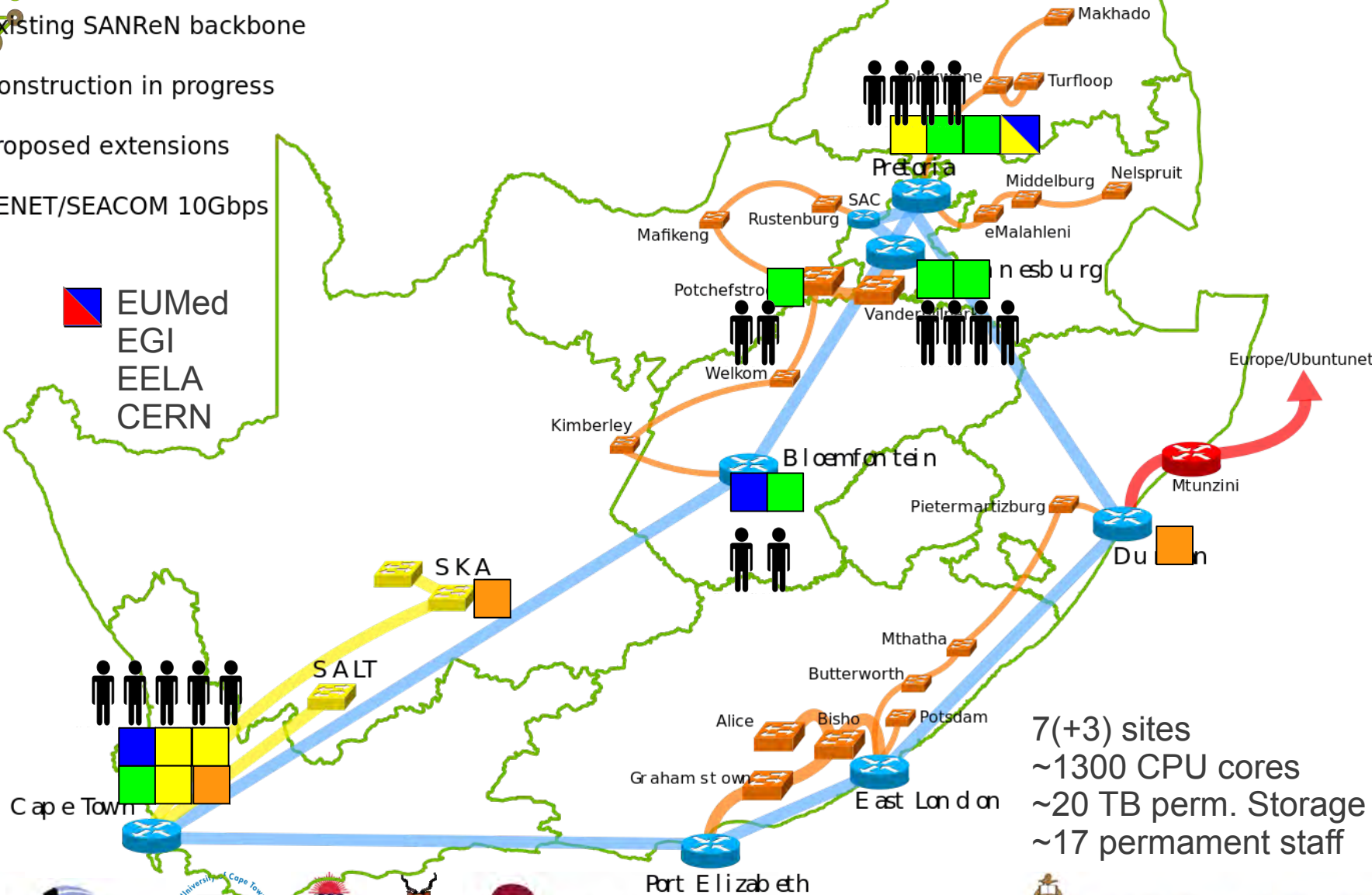




■ Functional Sites
 ■ Core Services
 ■ Deployment In progress
 ■ Proposed extensions
 ■ External Infrastructure

- Existing SANReN backbone
- Construction in progress
- Proposed extensions
- TENET/SEACOM 10Gbps

■ EUMed
■ EGI
■ EELA
■ CERN



7(+3) sites
 ~1300 CPU cores
 ~20 TB perm. Storage
 ~17 permanent staff



CHAIN Status & Partners

Grant Agreement signed with EC for a total contribution of 1.1 M€

Total cost: about 1.9 M€

Start Date: 1st December 2010 and 24 Months duration.

Partners:

INFN (Italy - Coordinator)

CESNET (Czech Republic)

CIEMAT (Spain)

GRNET (Greece)

IHEP (+ CNIC + PKU + BUA - China)

UBUNTUNET (Africa)

CLARA (Latin America)

PSA (India)

Plus:

ASREN (North Africa/Middle East/Gulf) Represented by INFN

▶ Asia-Pacific consortium Represented by INFN



CHAIN Work Programme

- WP1 – management
 - ***WP2 - consolidating the state of the art***
 - ***WP3 - present and emerging needs of intercontinental Virtual Research Communities***
 - ***WP4 - modelling the cooperation of European e-infrastructures with non-European ones***
 - WP5 – dissemination and outreach
-

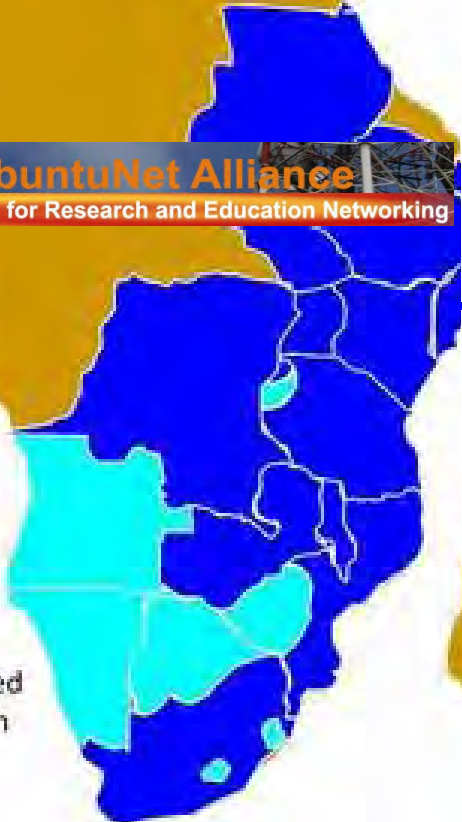




CHAIN is preparing African initiatives for an equal interoperable footing with global e-Infrastructure



SEE-GRID-SCI
SEE-GRID infrastructure for regional eScience





Consolidating the State of the Art

- Conduct an ***analysis of the state-of-the-art*** regarding current solutions for European Grid interfacing with grids in other world regions
- Produce a set of **guidelines** for operational and organisational interactions, customised for the type of region.
- Disseminate the ***NGI concept*** in the regions where this is needed, and conduct actions for ***national and regional sustainability***.
- The maturity of non-European e-Infrastructures varies across the world regions, where 3 typical scenarios can be identified:
 - Completely ***green-field*** regions which need to be supported from scratch (e.g. sub-Saharan Africa with the exception of South Africa).
 - Stable (if small) regional infrastructure ***established and interoperational*** with Europe (e.g. Mediterranean, LA & Caribbean, SEE).
 - Advanced countries/regions which have autonomously invested in e-Infrastructures and are willing to ***interoperate*** with European ones (e.g. China, India, New Zealand, USA, Japan, etc.)





Present and future needs of trans-continental scientific communities

- Continuing to provide limited **support** to the existing and **well experienced Virtual Research Communities**
- Providing support for communities that have already approached the Grid technology but are interested to **widen their activities** collaborating with other continents;
- Discovering and attracting **new scientific communities** or **merging similar ones** actually operating within separate e-Infrastructures worldwide.
- Involve at least a couple of **reference communities** that will be selected and involved in the project to **validate** the proposed model.
 - Reference communities so far : Life Sciences (NMR and SAXS), Climate Change, High-Energy Physics





- The ***coordination*** inter-***institutional*** and ***international*** of resources is as important as the deployment of these
- The integration of new resources into a regional infrastructure is a way to accelerate development and access
- ***Don't build a new train, add cars to a big train***



5/11/11



Africa and Arabia Regional Operations Centre



5/11/11



Africa and Arabia Regional Operations Centre

Africa & Arabia ROC
Regional Operation Center

Home **User Pages** Site Manager Pages Virtual Organisations Grid Services Monitors User Support Contact Us

About Africa & Arabia ROC

Last Updated on Monday, 26 September 2011 23:51 Written by Roberto Barbera

The Africa & Arabia Regional Operation Centre (Africa ROC for short) has been created as a coordination and support point for all sites in the two Regions wanting to participate in the stimulating and challenging endeavour of creating a common Grid infrastructure to foster e-Science.

Africa ROC is supported by many projects and initiatives. They are listed on the right frame of this page.

The dynamic map below shows both the sites belonging to the Africa ROC and those sites belonging to other ROCs but participating in common projects. Click with the mouse on the yellow circles, referring to sites, to get more information on their status.

If you are interested in knowing more about Africa ROC, please visit the pages of this site and/or feel free to contact us.

The Africa & Arabia ROC Managers

Supporting Projects/Initiatives

- ASREN
- CHAIN
- EPIKH
- EUMEDGRID-SUPPORT
- SAGRID

Africa ROC NEWS

- Africa ROC Nagios and Dashboard fully operational Available



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Africa and Arabia Regional Operations Centre

The screenshot shows the website for the Africa & Arabia Regional Operation Center. The header features a green banner with the text "Africa & Arabia ROC" and "Regional Operation Center". To the right of the banner are three logos: a globe with "eGRID" text, a circular emblem with a map, and the European Union flag. Below the banner is a navigation menu with the following items: Home, User Pages, Site Manager Pages, Virtual Organisations, Grid Services (highlighted with a red box), Monitors, User Support, and Contact Us. The main content area is titled "About Africa & Arabia ROC" and includes the following text:

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The Africa & Arabia ROC Managers

On the right side of the page, there is a sidebar titled "Supporting Projects/Initiatives" containing a list of projects with expand/collapse icons:

- ASREN
- CHAIN
- EPIKH
- EUMEDGRID-SUPPORT
- SAGRID

Below this list is a section titled "Africa ROC NEWS" with the following text:

- Africa ROC Nagios and Dashboard fully operational Available



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Africa and Arabia Regional Operations Centre

The screenshot shows the website for the Africa & Arabia Regional Operation Center. The header features a green banner with the text "Africa & Arabia ROC" and "Regional Operation Center". To the left is a map of Africa, and to the right are logos for the African Union, the Arab League, and the European Union. A navigation menu below the banner includes "Home", "User Pages", "Site Manager Pages", "Virtual Organisations", "Grid Services", "Monitors", "User Support" (highlighted with a red box), and "Contact Us".

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On the right side, there is a sidebar titled "Supporting Projects/Initiatives" listing several projects with expand/collapse icons: ASREN, CHAIN, EPIKH, EUMEDGRID-SUPPORT, and SAGRID. Below this is a section titled "Africa ROC NEWS" with a sub-heading: "- Africa ROC Nagios and Dashboard fully operational Available".



Africa and Arabia Regional Operations Centre

<https://roc.africa-grid.org>

Africa & Arabia ROC
Regional Operation Center

Home | User Pages | Site Manager Pages | Virtual Organisations | Grid Services | Monitors | User Support | Contact Us

About Africa & Arabia ROC
Last Updated on Monday, 26 September 2011

The Africa & Arabia Regional Operations Centre (ROC) is the central support point for all sites in the two regions, providing a common Grid infrastructure and services. Africa ROC is supported by many participating organisations.

The dynamic map below shows both participating sites and participating in common project information on their status. If you are interested in knowing more about us, please contact us.

The Africa & Arabia ROC Managers

Supporting Projects/Initiatives

- ASREN
- CHAIN
- EPIKH
- EUMEDGRID-SUPPORT
- SAGRID


Africa ROC NEWS

- Africa ROC Nagios and Dashboard fully operational Available



A coordinated management and publishing of resources and services




<https://gocdb.africa-grid.org/portal>



Africa & Arabia ROC

GOCDB

Regional Operation Center

GOCDB

- Home

Resources

- Browse Sites
- Add a New Site
- Browse Services
- Add a New Service
- Browse ROCs/NGIs

Downtimes

- Recent & Planned
- Archives
- Add a Downtime

About GOCDB4


- Doc, Help & Support

Welcome to the Africa & Arabia Grid Operation Centre DataBase (GOCDB)


The present instance of GOCDB is a service devoted to the system administrators of the Grid sites belonging to Africa & Arabia ROC.


GOCDB consists of a central authoritative database which contains static resource and topology related data about EUMEDGRID-Support and SAGrid infrastructures. It stores information about regions, countries, sites, nodes, services and users, and links this information together in a logical way.


The operation of the Africa & Arabia ROC GOCDB is a joint effort of the following projects/initiatives:




Arab States Research and Education Network









GOCDDB is developed by Rutherford Appleton Laboratory, STFC, UK on behalf of EGI.eu. Licensed under the gLite Software (Apache) License.

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Support services and issue routing
<https://support.africa-grid.org>



Grid User Support

Regional Operation Center



[Register](#) / [Apply for support staff](#)

[Home](#) · [Submit ticket](#) · [Search ticket](#) · [Support staff](#) · [Contact](#) · [Legals](#)

Tickets

▶ [Submit new ticket](#)

Tickets from Bruce Becker (access via certificate)

ID	Status	Date	Info
▶ 276	assigned	2011-10-18	Nagios site alerts
▶ 275	solved	2011-10-17	goodb refusing service addition
▶ 272	waiting for reply	2011-10-12	Site BDII configuration fails
▶ 270	solved	2011-10-12	ZA-UP : site has dissapeared
▶ 269	solved	2011-10-12	ZA-UJ : CREAM-CE not responding

▶ [Show my complete ticket list \(open/closed/subscribed\)](#)

▶ [Search ticket database](#)

Latest news

No news at the moment.

Maintenances

No news at the moment.





Application databases and knowledge base

- Access to infrastructures are not enough – need to prove **scientific value**
 - Scientific output is closely related to **data** and **applications**
 - Application databases (EGI/EPIKH/CHAIN) to avoid replication of effort and **encourage standards** adoption
 - Interoperability and coordination of data and applications is important to VRCs
-





A wide variety of applications available for researchers

Computer science

Earth science

Fusion

High-energy physics

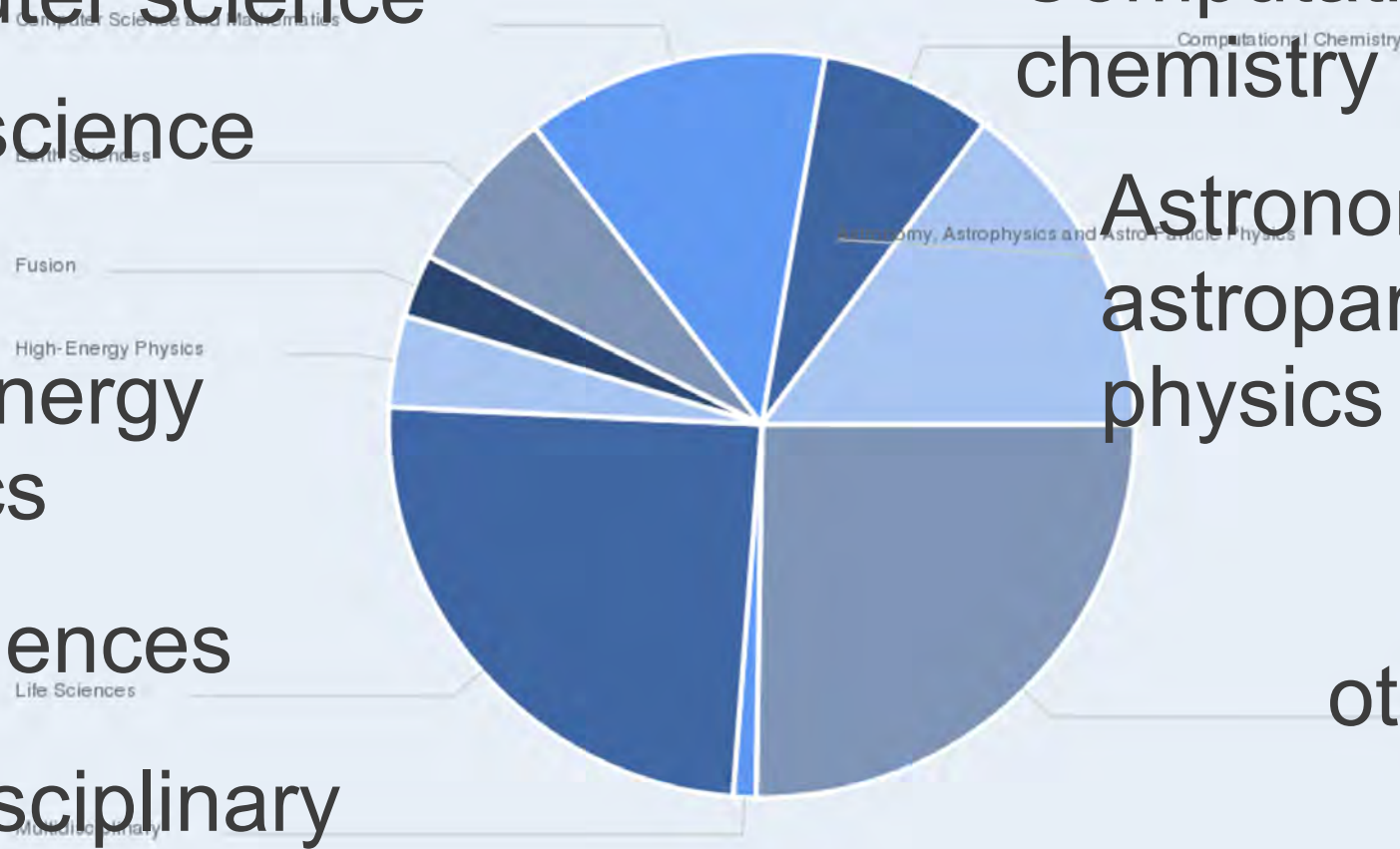
Life sciences

multidisciplinary

Computational chemistry

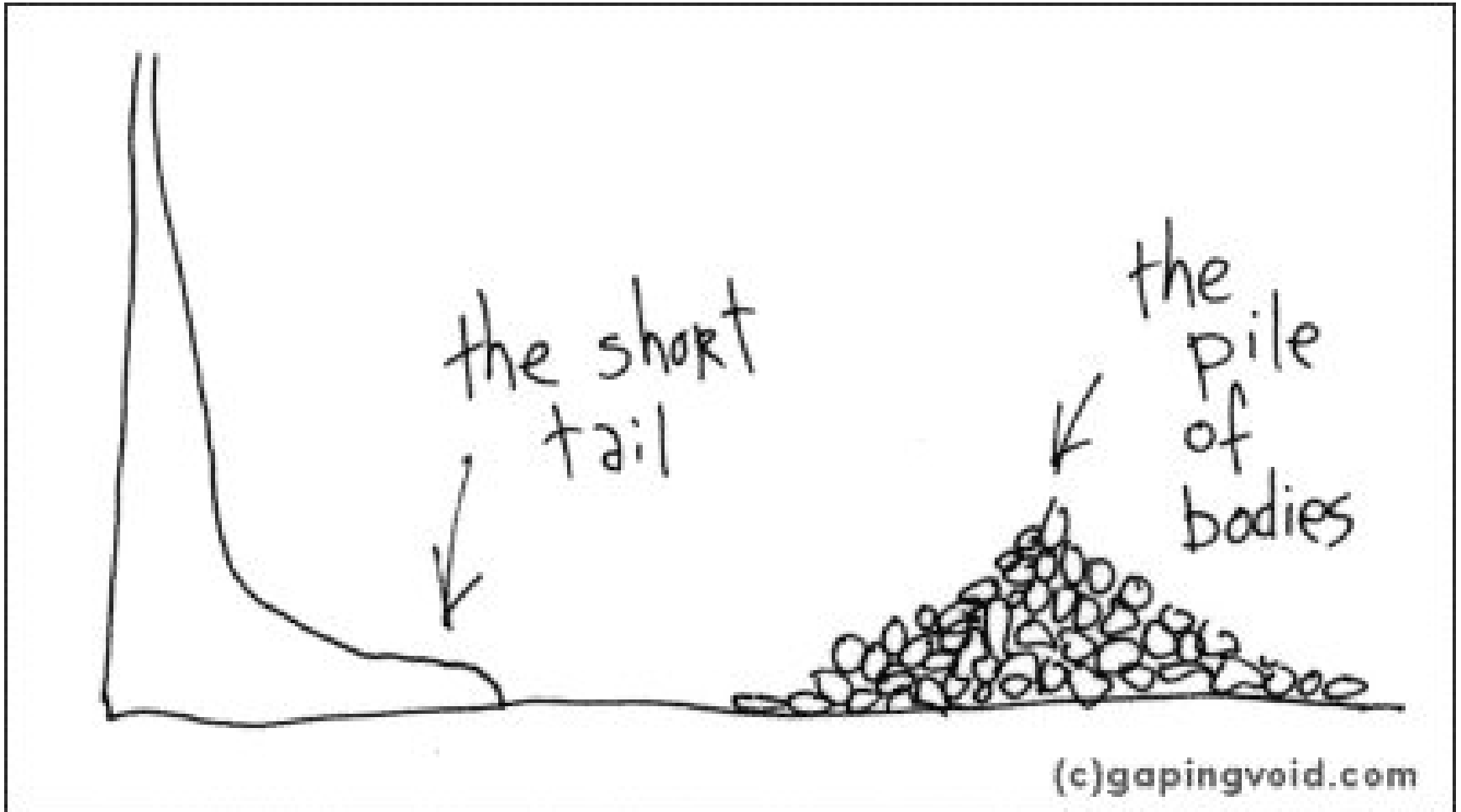
Astronomy, astroparticle physics

others





Beware the long tail...



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Thank you

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For more information :

CHAIN website : <http://www.chain-project.eu/>

CHAIN Knowledge Base :

<http://www.chain-project.eu/knowledge-base>

