KCDC – the KASCADE Cosmic Ray Data Centre and its Development to a Global Analysis and Data Centre in Astroparticle Physics

Donghwa Kang

Karlsruhe Institute of Technology

Astroparticle Physics

Particle Physics

Astrophysics

Astroparticle Physics

Particle Physics

Astrophysics

Neutrinos

Cosmic Rays

Dark Matter

Gamma Astronomy

Gravitational Wave

Astroparticle Physics

Particle Physics

Astrophysics

Neutrinos

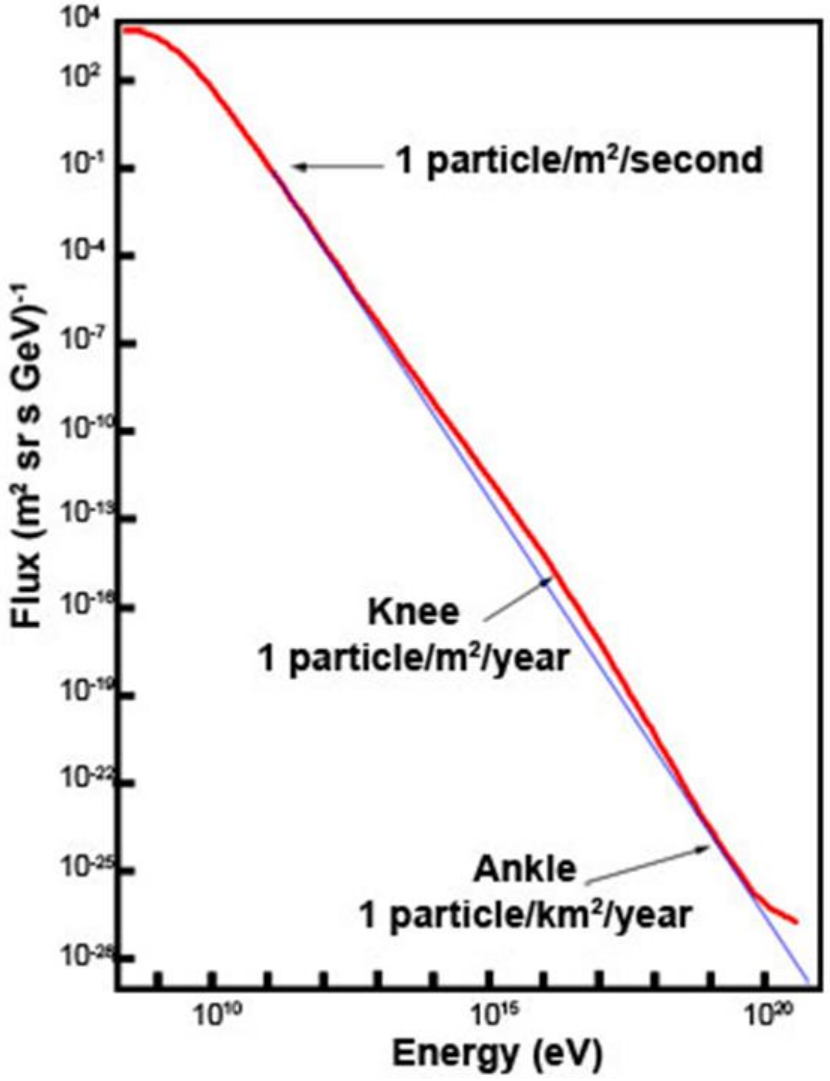
Cosmic Rays

Dark Matter

Gamma Astronomy

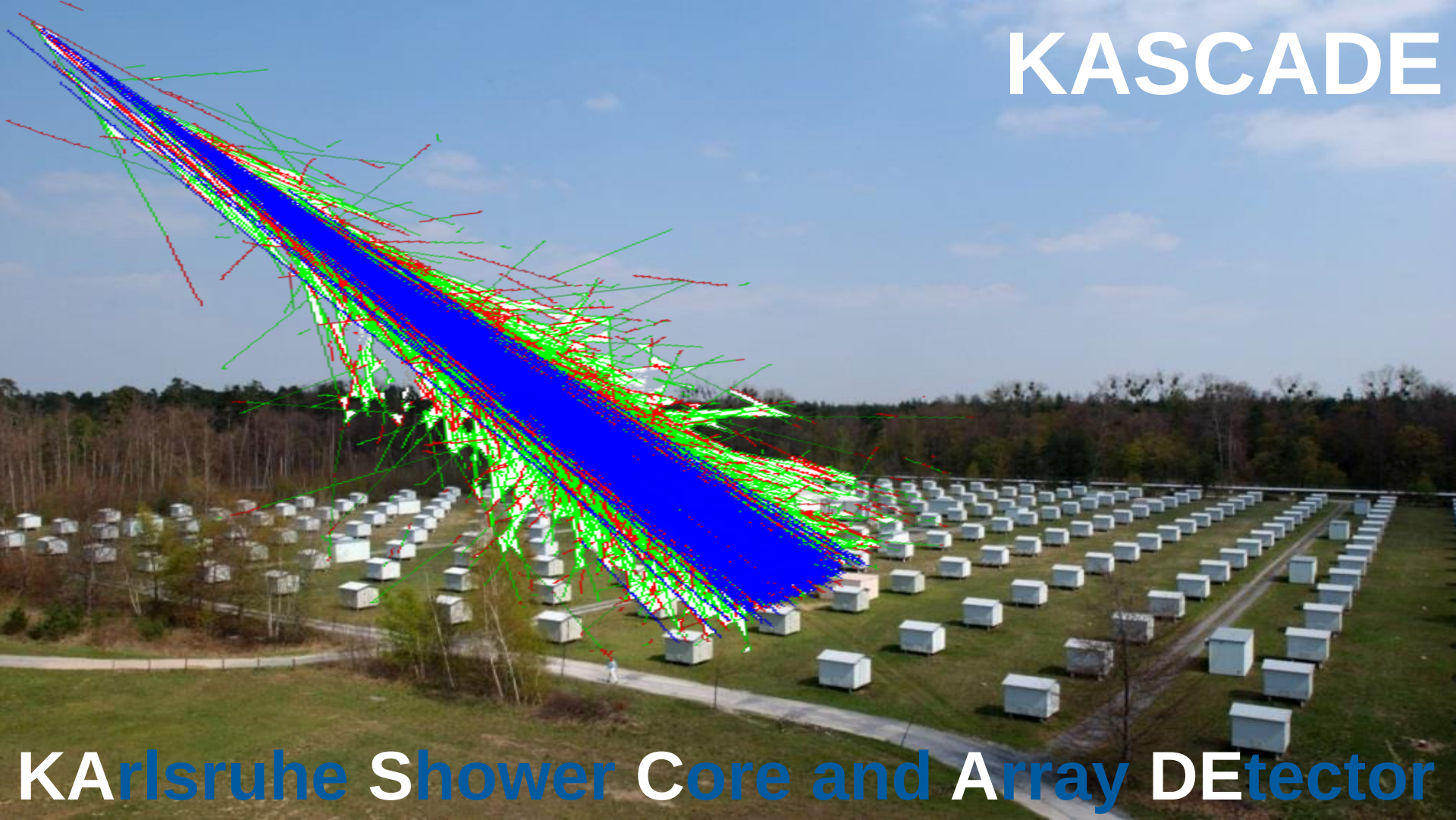
Gravitational Wave

Cosmic Rays

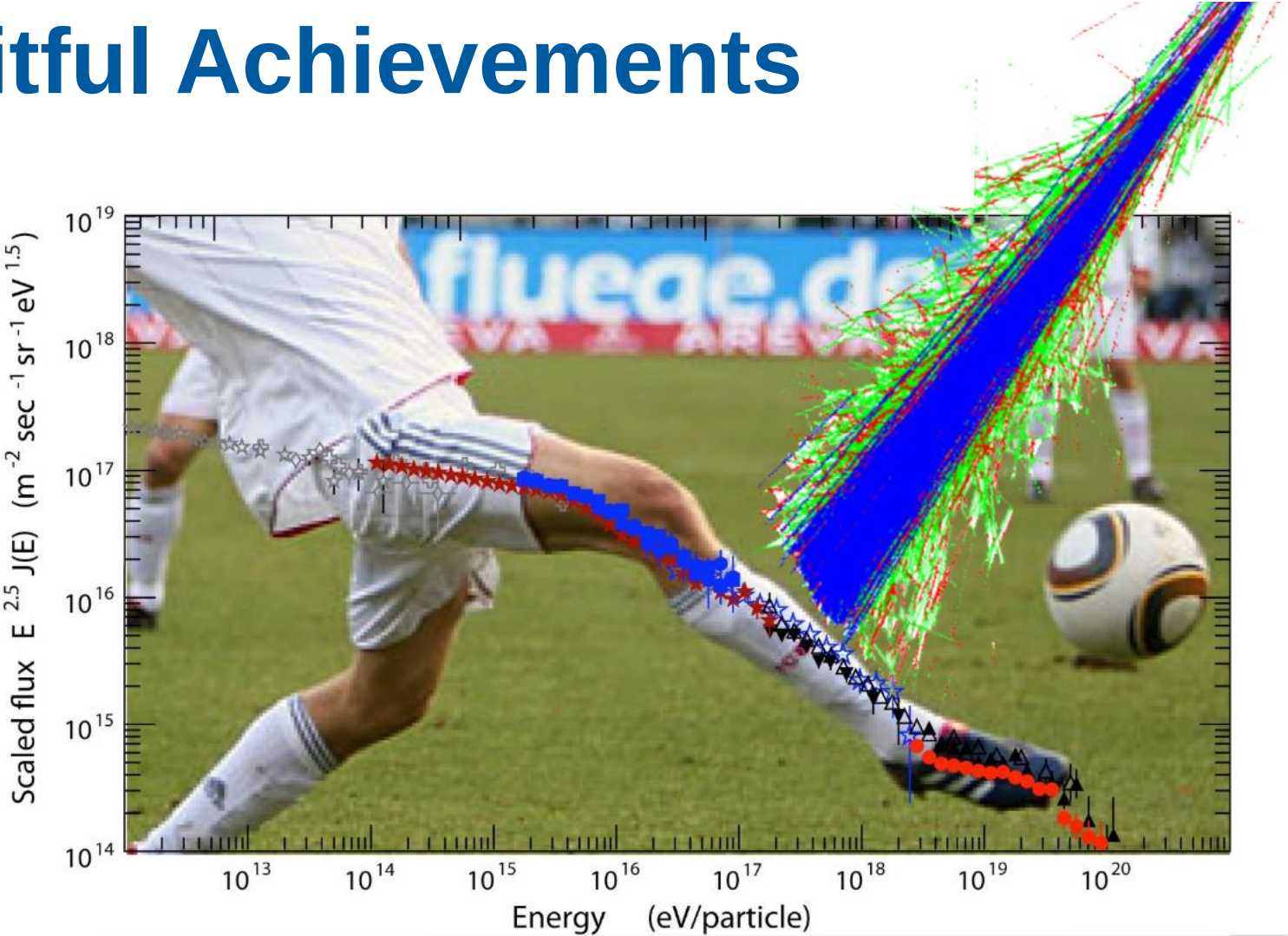


Flux of Cosmic Rays

Extensive Air Showers


KASCADE
KArlsruhe Shower Core and Array DEtector

Fruitful Achievements



https://kcdc.ikp.kit.edu/

A web-based platform to provide scientific data for the general public

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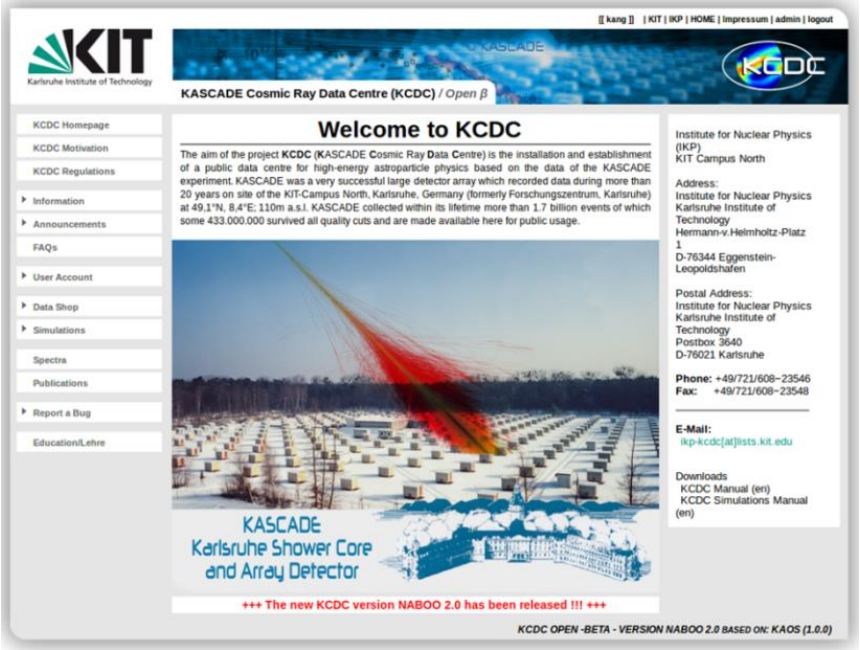
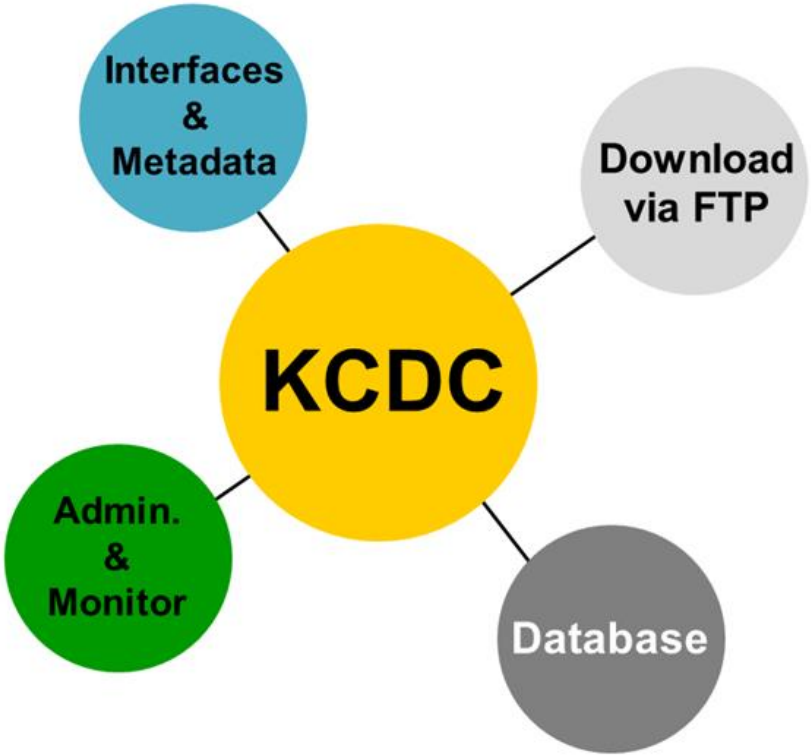
A web-based platform to provide scientific data for the general public

To archive original research data such as from KASCADE

To offer long-term scientific data for community and students



Web Portal



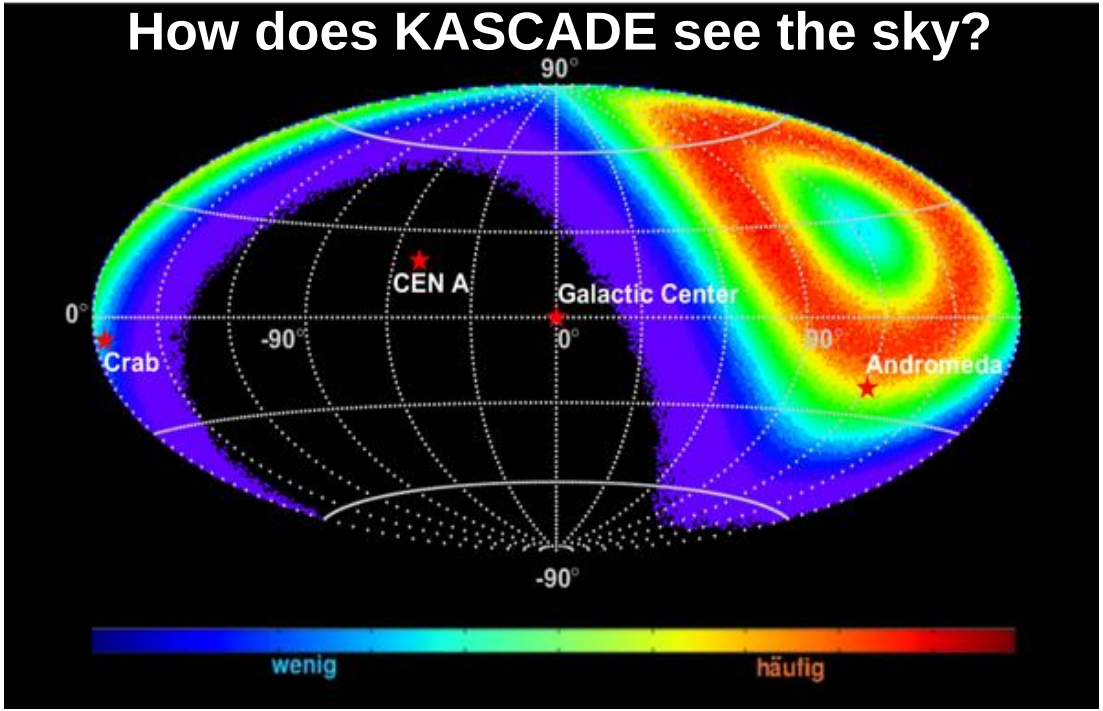
Intuitive and clear design

Free and unlimited access upon registration

License based on EULA* model

* End User License Agreement

Education



An important goal of the public data release

Examples of simple data analyses for school students

KCDC is

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Already accepted by Astroparticle Physics community

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Forerunner in public data access in Astroparticle Physics

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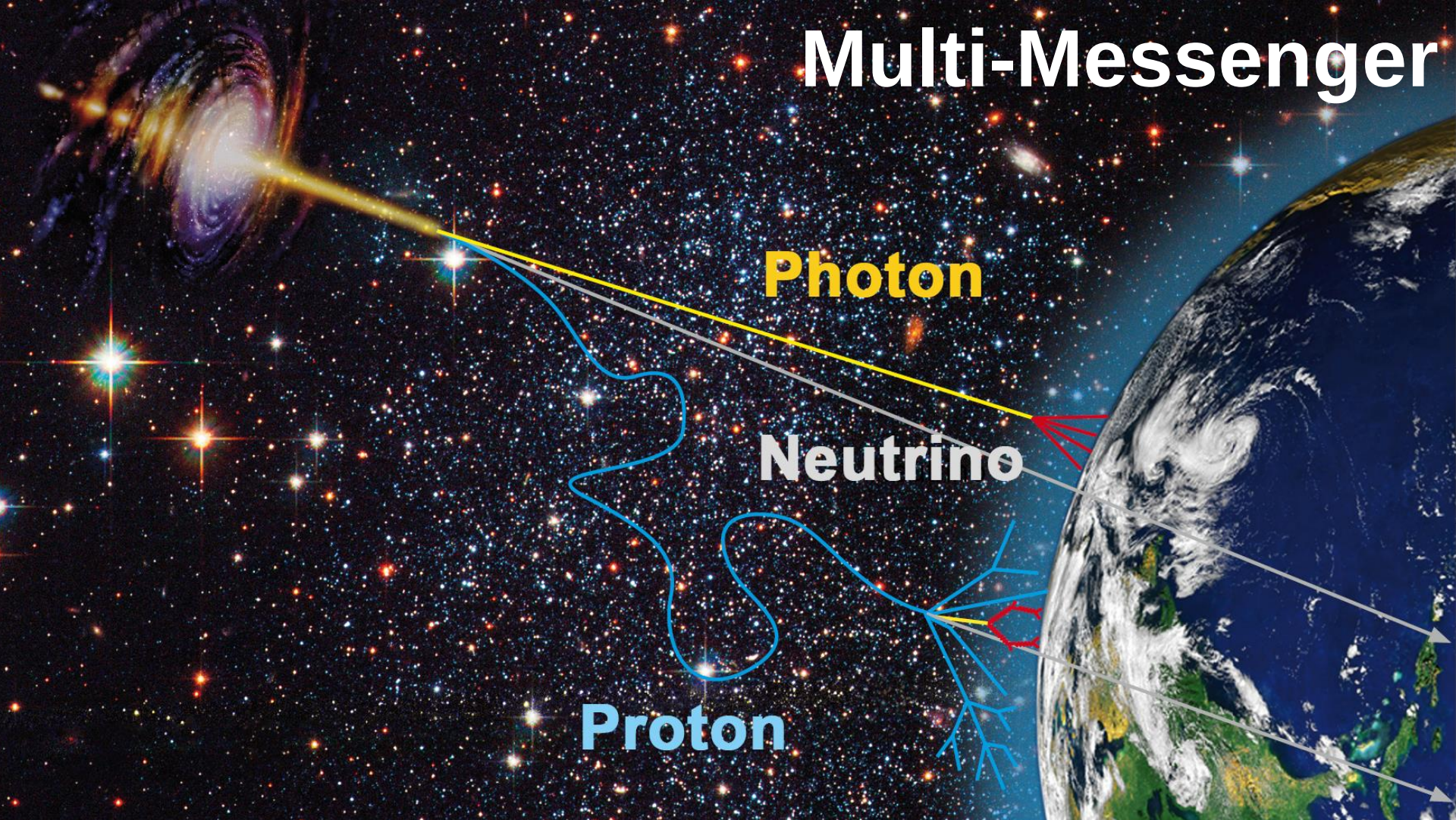
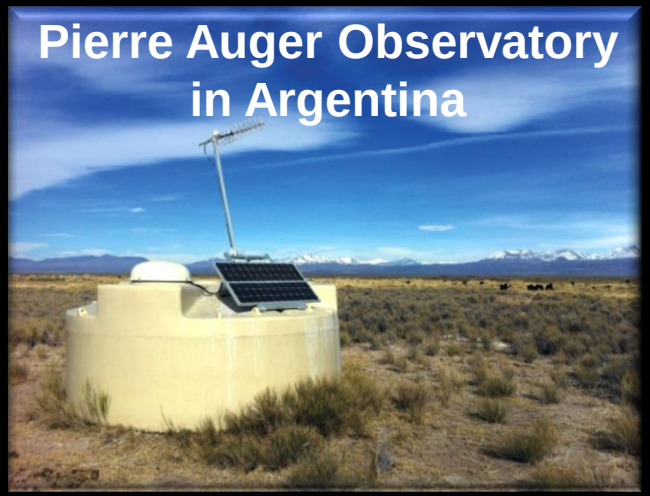
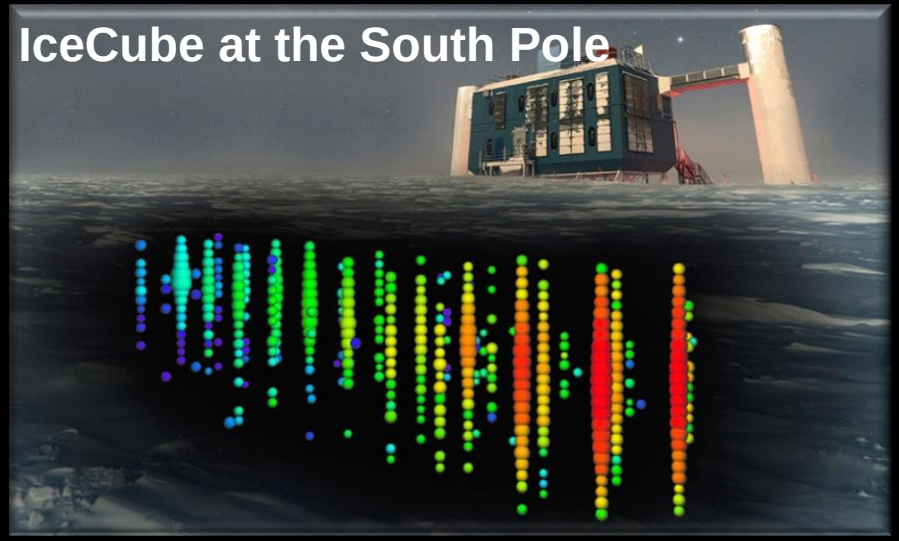
First step towards a Global Analysis & Data Centre

Initiative for a Global Analysis & Data Centre in Astroparticle Physics

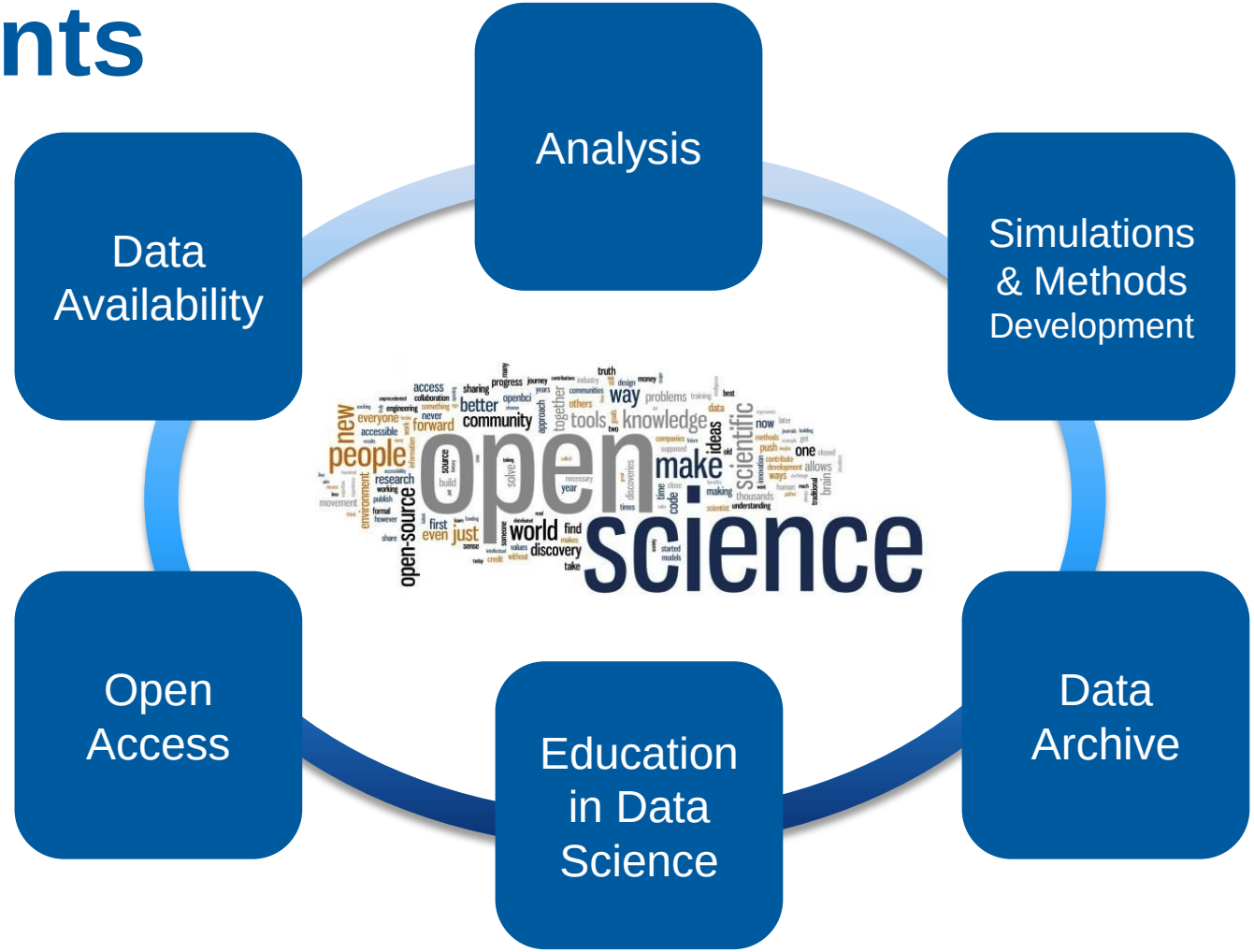

Multi-Messenger
Photon
Neutrino
Proton



Globally Distributed Experiments



Elements


Analysis
Simulations & Methods Development
Data Archive
Education in Data Science
Open Access
Data Availability
open science
people
make
world
community
knowledge
scientific
open-source
new
way
better
tools
discovery
just
research
forward
everyone
access
problems
ideas
one
allows
now
first
even
find
year
solve
build
environment
movement

Next Steps

Develop an Open Science system based on KCDC

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Develop an Open Science system based on KCDC

Develop integrated solutions of distributed data storage algorithms and techniques

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Develop integrated solutions of distributed data storage algorithms and techniques

Allowing community to perform multi-messenger analyses

Stay tuned!