

VLVnT11, Erlangen, 12.-14. October 2011

A Global Neutrino Observatory (GNO)

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13.10.2011

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FOR ASTROPARTICLE
PHYSICS

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Overview

- Some observations
- What could GNO be and what could it achieve?
- Towards implementation

Neutrino Astronomy ($E > 10 \text{ GeV}$)

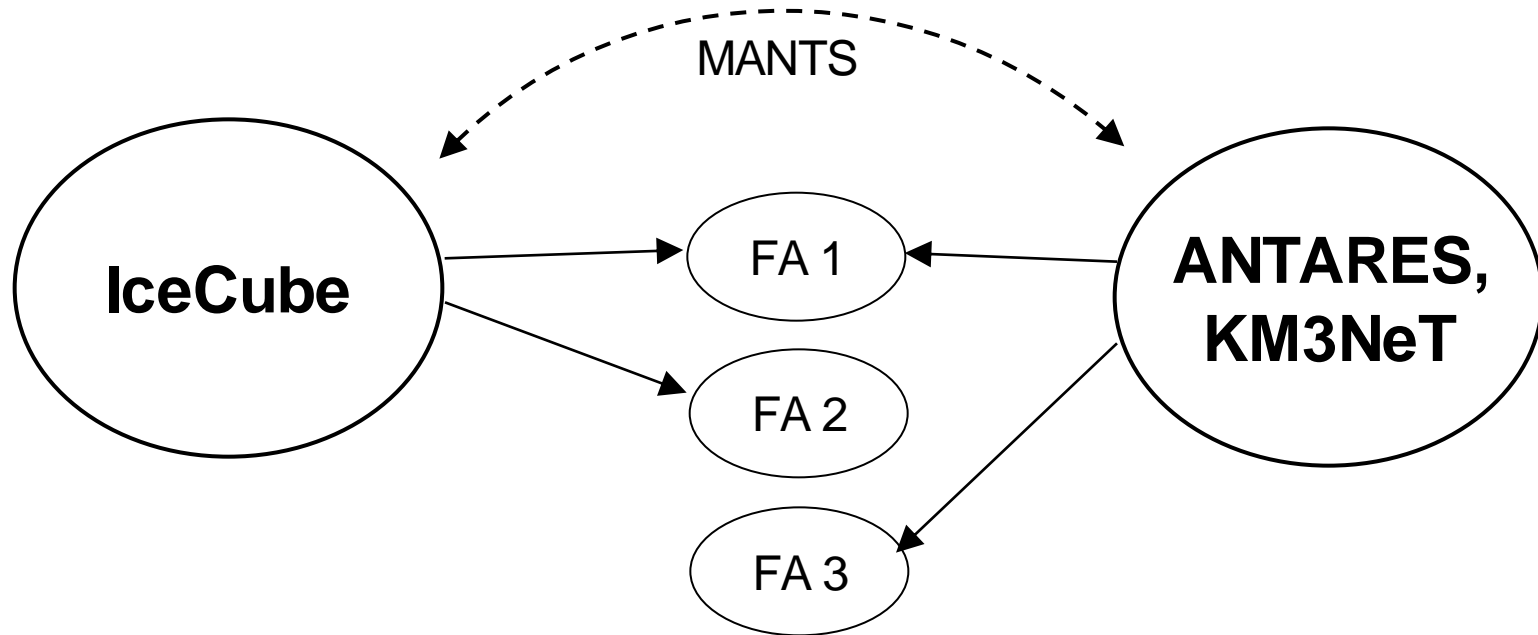
- No astronomy without observation
 - Future of neutrino astronomy depends on availability of appropriate observatories
- Current status:
 - ANTARES, Baikal → probably too small
 - IceCube → waiting for a discovery
- Future plans:
 - KM3NeT
 - IceCube extensions
 - GVD
 - Alternative technologies

substantial funding required;
global-scale effort

A critical situation

- No observation so far
- Threat to neutrino astronomy:
“Doesn't work, give it up!”
(e.g.: “Fund KM3NeT only if IceCube discovers a signal”)
- Requires a discovery ... and/or:
 - coordinated efforts and common position
 - convincing physics case
 - effective use of resources
→ Complementary physics capabilities

The current organisational setup



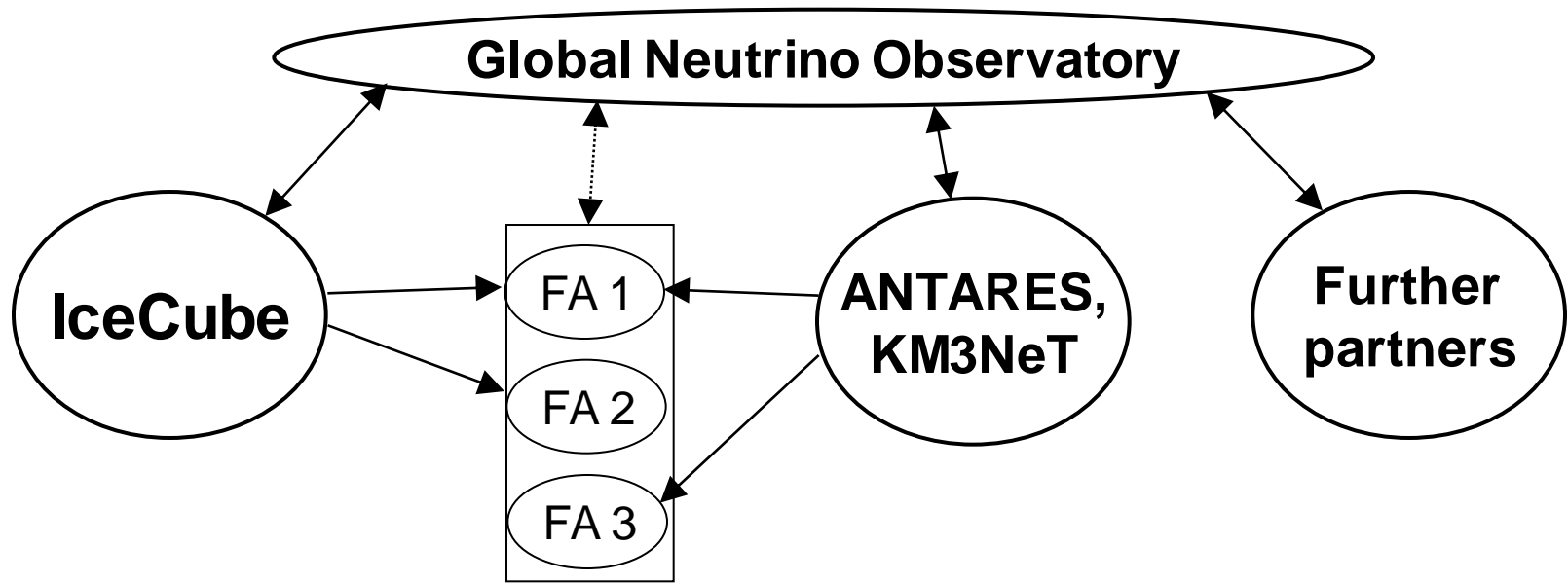
- Further experiments (Baikal, lower-energy, ...)
- Theory groups
- “Associated sciences”

Recommendation in ASPERA (*) Roadmap:

“The IceCube and KM3NeT collaborations are encouraged to strengthen cooperation, with the goal to form a future Global Neutrino Observatory.”

(*) AStroParticle European Research Area

How GNO could fit into the picture



- GNO is an “umbrella” over (all) parties of neutrino astronomy
- The experiments/partners are autonomous, independent entities participating in GNO
- GNO offers a forum for exchanges and consultations and can represent neutrino astronomy vs. science and science policy communities

What GNO could offer

- A forum for regular exchanges and consultations (science, technology, funding/strategies, policy), e.g.
 - organise the MANTS meetings
 - foster exchanges at PhD/postdoc/scientist level
 - ...
- An instrument for strategy building; avoidance of “competition losses”
- A strong voice towards funding agencies and policy
- An environment for incubating new projects and put them on track

Towards GNO implementation

- A possible scheme:
 - Form a “GNO preparation group”
 - Establish GNO
 - what kind of entity? How established? Bootstrap?
What mandate? Needs to be discussed.
 - Establish GNO – project partnerships by bilateral agreements (MoUs?)
 - Start action
- I suggest to discuss this in the project managements and reiterate once feedback is available

Let's learn a lesson from
particle physics:

LHC only became reality
due to an unanimous and
coordinated global support
of the whole community ...