

# IceCube-Gen2

Status Update

Anna Nelles

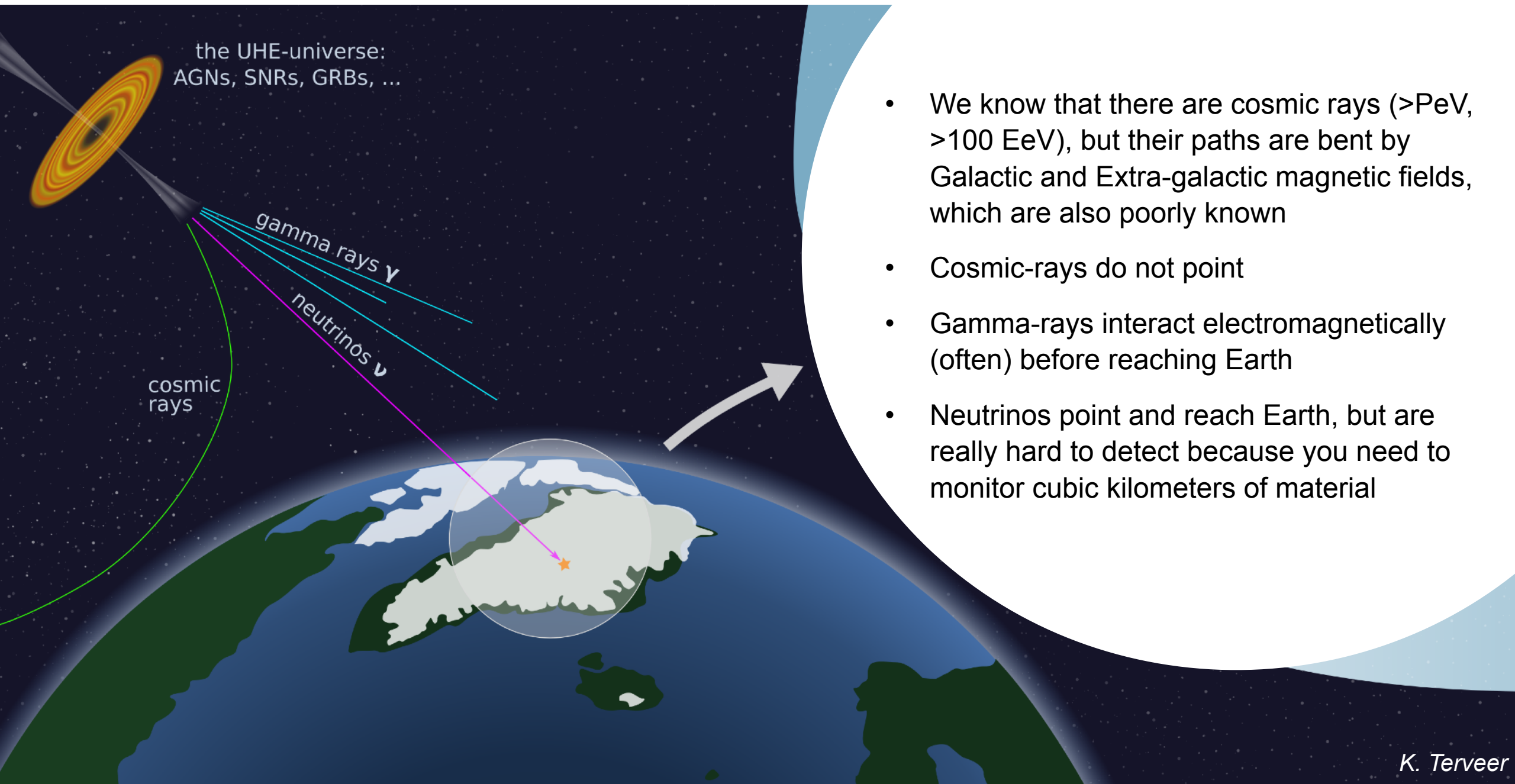


Co-funded by  
the European Union



ERLANGEN CENTRE  
FOR ASTROPARTICLE  
PHYSICS



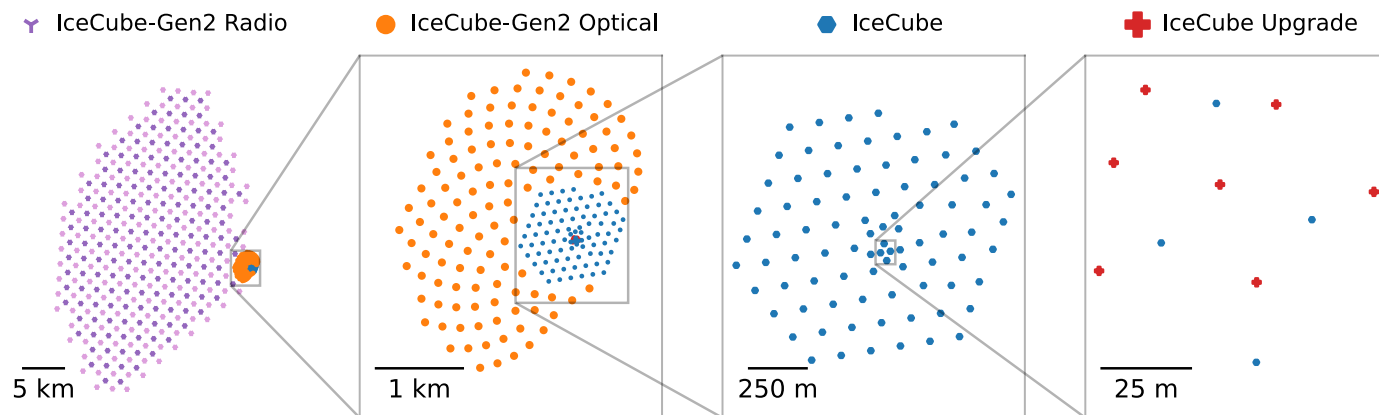
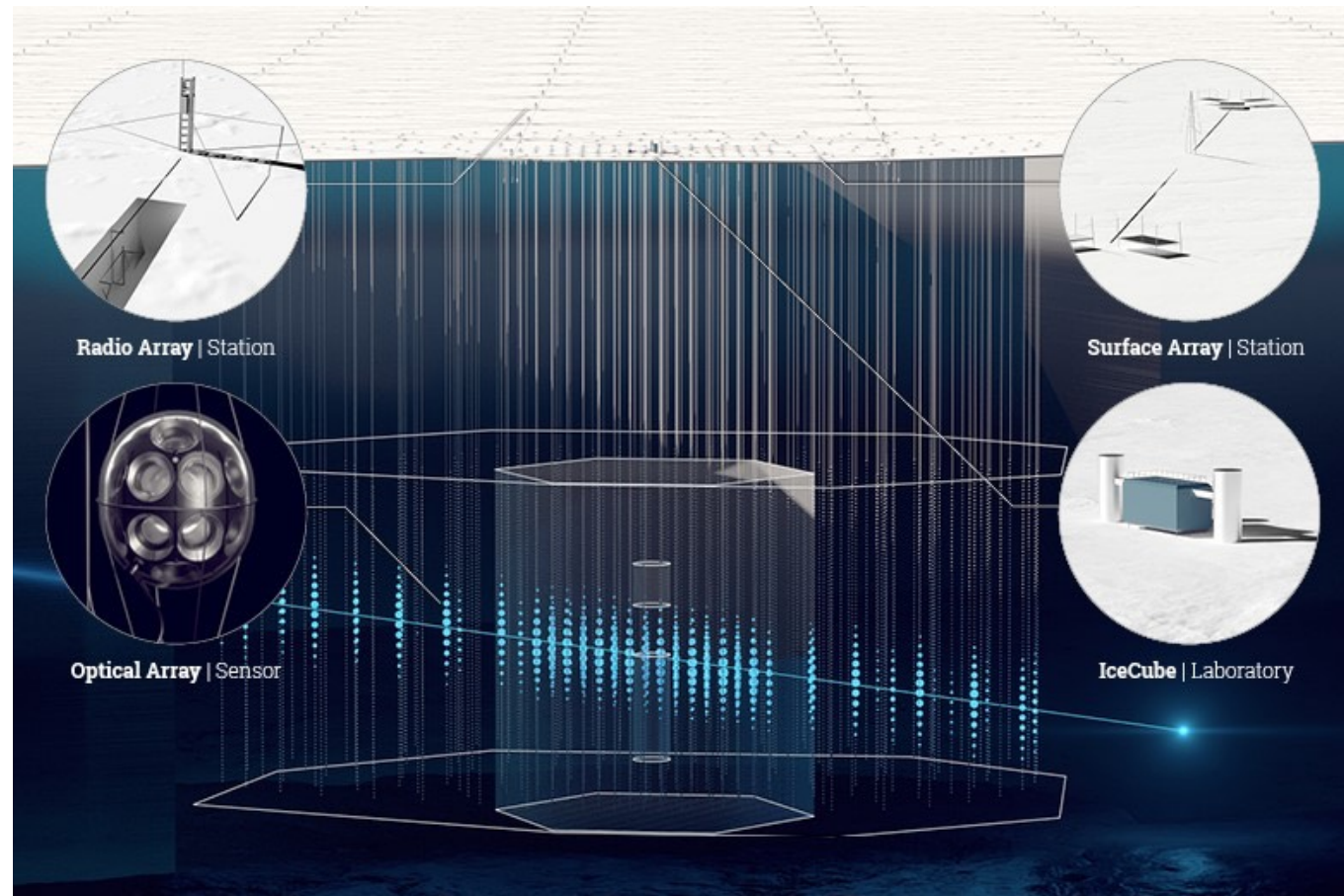
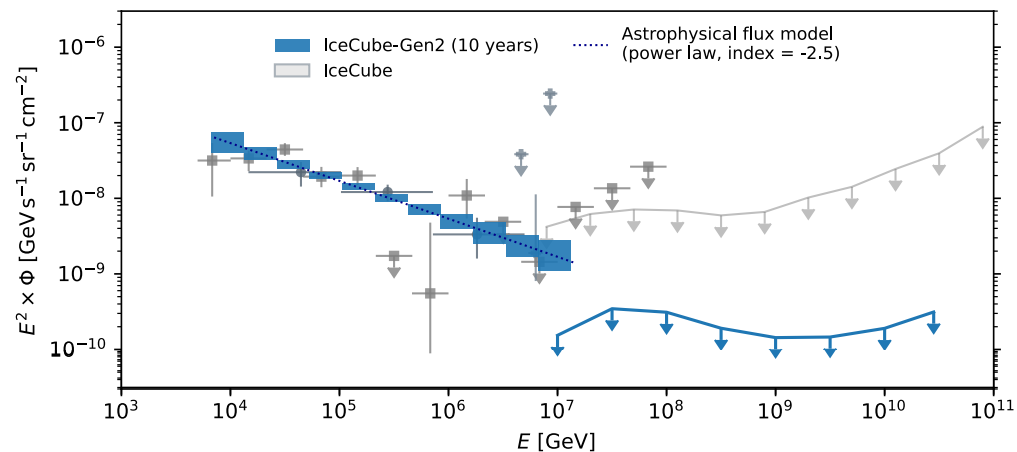


K. Terveer

# IceCube-Gen2

## Our priority

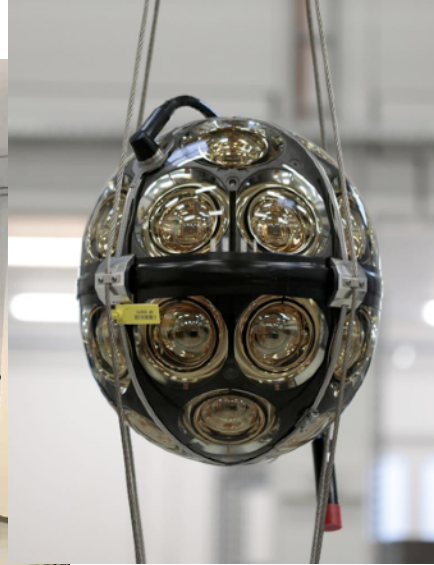
- IceCube has been a great success in the field of astroparticle physics
- IceCube-Gen2 will extend the energy range of IceCube and increase its sensitivity
- If this goes forward it will be THE neutrino telescope





# Our path towards IceCube-Gen2: Upgrade & RNO-G

## Two critical projects



- First 128 mDOMs made by DESY shipped to Antarctica for IceCube Upgrade
- Pioneers the multi-PMT technology for IceCube, will be used for IceCube-Gen2

*Was presented in Liebenberg meeting earlier*

- RNO-G pathfinder for Radio Array of IceCube-Gen2
- DESY one of the largest groups in RNO-G
- Main electronics on a good route (well defined R&D)
- Critical items e.g. drilling, (winter-)power not yet 100% working

*Will be presented in Liebenberg meeting in fall*

# IceCube-Gen2: Priorisierungsprozess

## DESY is Trägereinrichtung

Other DESY project:  
PETRA IV

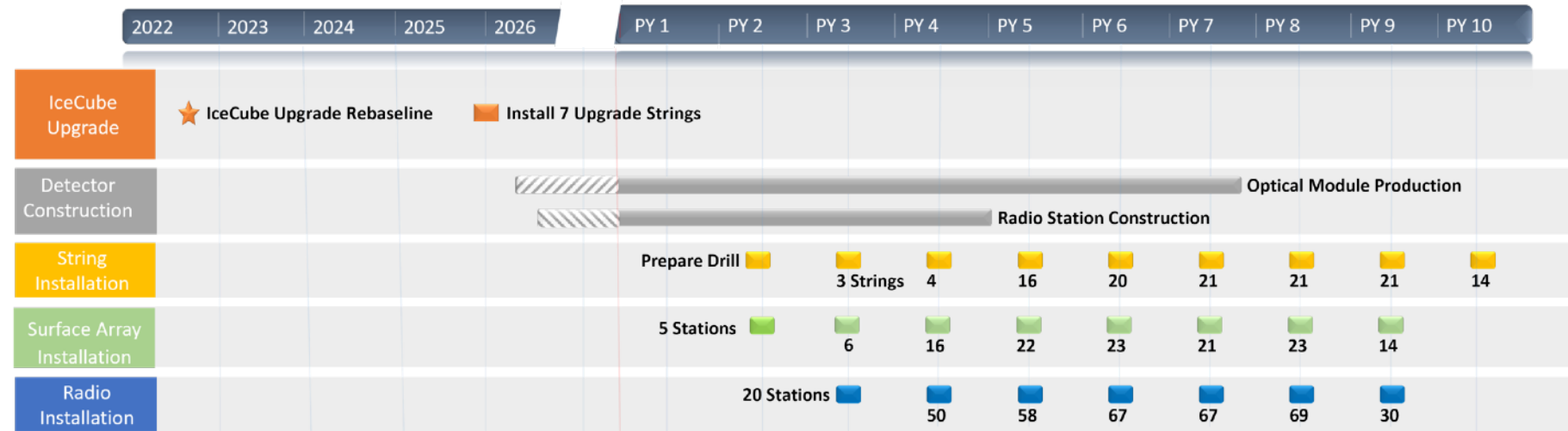
- On 15.07.2024 BMBF published the call for (what is their new version of a Roadmap)
  - The costs for Germany have to be > 50 MEUR to apply*
  - However, if you are on the short-list, it doesn't mean that you are getting any funding*
- IceCube-Gen2 falls in this category, DESY is Germany's strongest group in IceCube, so together with KIT we lead the proposal (+ Aachen, Bochum, Dortmund, Erlangen, Mainz, München (TU), Münster, Wuppertal)
- Costs currently being translated from US (and Helmholtz) budgeting to BMBF budgeting (*work in progress*)
- Deadline: 25.10.
  - Before: directorate, foundation council, ....
  - Requirements from BMBF change weekly

	Construction costs	Operations costs
Germany (labor)	15,500 kEUR	1,650 kEUR (FTE,computing)
Germany (invest)	55,300 kEUR	615 kEUR (cash)
Japan, Belgium, Sweden	28,100 kEUR	TBD
USA	294,600 kEUR	TBD
Total (Invest)	393,500 kEUR (167,800 kEUR)	11,000 kEUR per year

# IceCube-Gen2: Priorisierungsprozess

More details

From TDR



- “South Pole Master Plan” = 10 years no large science at the South Pole to refurbish the station
  - We actually are (almost) happy about this: First public acknowledgment that things have to be done and will be done
  - Current earliest plan from project:  
PDR = 2026, FDR = 2028, Earliest for PY1 = 2029  
South Pole Master Plans (PY2 = 2032, “2 year delay”)
- Also good signs from US politics: Senate appropriations committee urges Department of Defense to buy new (polar suitable) planes
- Continuous interaction with NSF to formally fund process towards PDR