

Astroparticle Physics European Consortium

General Assembly Meeting 18+19 July 2022

report from GA chair

Topics addressed in chair's report:

- New members GA
- Approval of the Agenda
- Minutes last GA
- JENA Activities
- Support letter Astrogam
- NuPECC Long Range Plan
- Astronet Roadmap
- Snowmass

GA membership



- France (CNRS)
 - Vincent Poireau has replaced Berry Giebels (since June 2022).
- Ukraine:
 - Now approved, the National Academy of Sciences of Ukraine is a new member of APPEC, Fedor Danevich (Institute for Nuclear Research of NASU) is the contact person.
- Denmark:
 - Continued discussions with the Danish astroparticle physics community via Jason Koskinen (Niels Bohr Institute, University of Copenhagen).
- UK (STFC):
 - Justin O'Byrne substitutes Jenny Hiscock

Agenda GA 3/2022

https://indico.cern.ch/event/1171120/



14:00 → 18:20 APPEC GA 03/2022		09:00 → 13:35	0:00 → 13:35 APPEC GA 03/2022	
14:00	Welcome from the local host		09:00	Presentation by the Ukraine Representative in APPEC
14:10	Opening and welcome; new GA members, adoption of the agenda		09:25	Welcome of Ukraine in APPEC
14:20	Minutes of last GA ⑤ 5m APPEC GA_240520		09:35	News from Horizon Europe ③30m Speaker: Antoine David Kouchner (Centre National de la Recherche Scientifique (FR))
14:25	Presentation by the Austrian Academy of Sciences on their AP activities Speaker: Josef Pradler (Austrian Academy of Sciences (AT))		10:05	Report by the General Secretary
14:50	Welcome of Austria in APPEC		10:50	Break ③ 15m
15:00	Foundation of the Einstein Telescope Collaboration		11:05	Coordination of Underground Labs ① 15m Speaker: Aldo lanni (INFN LNGS)
15:45	Break ③ 15m		11:20	APPEC MoUs ② 25m
16:00	APPEC Roadmap Evaluation: next steps ① 1h 25m Speaker: Prof. Sijbrand De Jong		11:45	Terms SAC/GA/JS ③30m
17:25	Report by the chair ③30m JENA Activities			
	letter of support of Astrogam News on NuPECC Long Range Plan, Astronet Roadmap, Snowmass		12:15	Buffer / Free slot
	Speaker: Andreas Haungs		12:30	AOB ③30m
19:00 → 21:00 Dinner ③ 2h				next meetings
0/07/0000 CA				

Minutes GA 2/2022





APPEC GA meeting 2022 24th of May 2022, remote

Attendees: Stan Bentvelsen, Giacomo Bruno, Julie Epas, Peter Forgacs, Carlos Peña Garay, Berrie Giebels, Andreas Haungs, Katharina Henjes-Kunst, Pilar Hernandez, Katri Huïtu, Karl Jakobs (ECFA), Sijbrand de Jong, Stavros Katsanevas, Ulrich Katz, Job de Kleuver, Antoine Kouchner, Sylvie Leray, Marek Lewitowicz (NuPECC), Christos Markou, Josef Pradler, Marco Pallavicini, Leszek Roszkowski, Colin Vincent (Astronet), Krijn de Vries, Andrew Williams (ESO), Xin Wu

https://indico.cern.ch/event/1171120/contributions/4956973/attachments/2480805/4258686/APPEC%20GA 24 052022 minutes.pdf





JENA Symposium

• 2nd JENA Symposium: 3-6 May 2022 in Madrid, Spain

https://indico.cern.ch/event/1040535

- 164 registered participants
- All talks available at Indico YouTube
- Follow-up topics:
 - Funding Agency connections
 - Expression of Interests
 - Overarching Working Groups
 - Next JENA Symposium







Funding Agency Session:

Total Persons present: 23 Total countries + CERN + EC: 11

- Items for consideration:
 - Suggestions for the next meeting: more space to young people, competition with other disciplines, Carbon footprint of the field should be addressed
 - Improve collaboration between local and large international infrastructure (flagship experiments);
 ESFRI is a way to facilitate this coordination
 - Many European calls are dedicated / require to address more than one community
 - FAs require that new RIs have a coordinated approach for the computing
 - Support topics with risk to fall in between the areas (EoI); highlight socio-economic benefits, technology transfer
 - Consider contributions to the International year of fundamental physics and sustainability (IYBSSD)

https://www.iybssd2022.org/en/home/





Expression of Interests (EoI)

- 1. Dark Matter iDMEu (https://indico.cern.ch/event/869195/overview)
- 2. Gravitational Waves for fundamental physics (https://agenda.infn.it/event/22947/overview)
- 3. Machine-Learning Optimized Design of Experiments MODE (https://mode-collaboration.github.io/#home)
- 4. Nuclear Physics at the LHC (https://indico.ph.tum.de/event/4492/)
- 5. EDM Search of Charged-Particle Electric Dipole Moments (https://indico.ph.tum.de/event/4482/)
- 6. Synergies of EIC with LHC EIC; kick-off happened in June 2022 (https://indico.ph.tum.de/event/7004/)
 APPEC EoI representatives in 1., 2., 3., 4., 6.
- Very good presentations at JENAS (all are validated as community overarching networks)
- A possible 7th EoI (Gamma Factory) is under discussion, but needs more preparation before application.
- ENA chairs will discuss with all Eol status, plans and schedule until next JENA Symposium in September 2022
- APPEC should revisit the JENAS Eol Task Force representatives (see http://www.nupecc.org/jenaa/?display=eois)





Future actions within JENA Activities:

- Overarching Working groups:
 - Diversity: results and current status not fully satisfying; continuation / restart required; needs concept as well as commitment from APPEC, in particular
 - Recognition: successful; final report published: Recognition of Individuals in Large Collaborations Summary Report
 - New Working Groups with different topics (e.g. Training & Outreach, Knowledge Transfer, Sustainability, ...)?
- Dedicated Workshop for Computing on European Level ?
 - Clear request from discussions at the JENA Symposium; idea is to organize it early 2023!
 - Should we aim to include astrophysics in this workshop?
- Next JENAS in 2.5-3 years
 - Better preparation of the FA session with clear questions
 - Taking into account the feedback of JENAS 2022

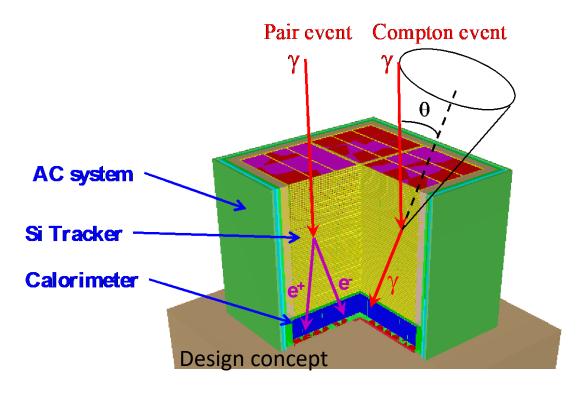
APPEC and ASTROGAM





ASTROGAM Proposal for ESA M7 Mission Opportunity Call

PI: A.De Angelis (INFN, INAF), Co-PI: V.Tatischeff (CNRS), Co-PI: D.Berge (DESY)



- Gamma-ray satellite concept with unprecedented energy coverage (100 keV – 3 GeV), sensitivity, and angular resolution
- Proposal submitted by scientists from 16 ESA member states:
 - Croatia, Czech Republic, Denmark, Finland, Ireland, Italy, France, Germany, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, UK
- Diverse and unique astroparticle physics science cases, e.g.
 - Multi-messenger science: Neutrino and GW sources
 - Unique MeV blazar population studies reaching z=6 and beyond
 - Galactic and extragalactic cosmic ray accelerators
 - Explosive nucleosynthesis & chemical evolution
 - Dark matter and new physics
 - See White Paper at https://arxiv.org/abs/2102.02460
- Why APPEC should write a letter of support
 - Mission proposals can submit support letters
 - ASTROGAM is led by Astroparticle Physics community members
 - ASTROGAM is an essential partner for many priority APP projects of the coming decade (CTA, Einstein Telescope, KM3NeT)

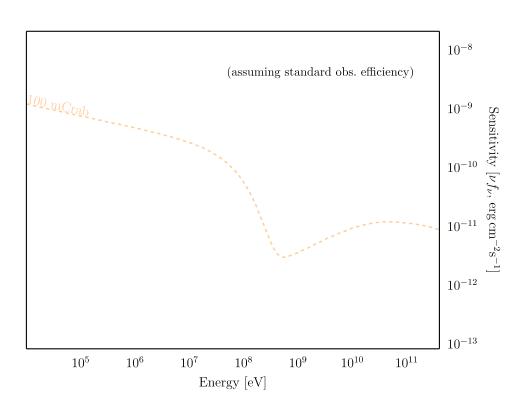
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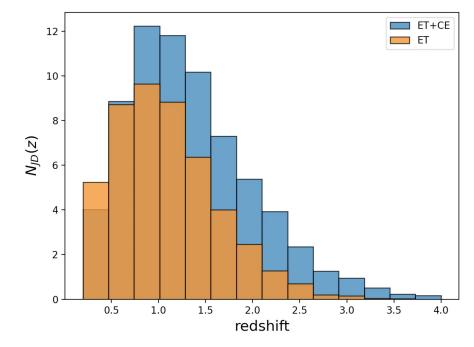




ASTROGAM Sensitivity & Gamma Ray Burst Rates γ+GW

PI: A.De Angelis (INFN, INAF), Co-PI: V.Tatischeff (CNRS), Co-PI: D.Berge (DESY)





Joint GW + ASTROGAM detections of short GRBs in 1 year (50 sGRBs / year with ET, 70 sGRBs with ET + Cosmic Explorer, 300 long + short GRBs measurable per year in total)

APPEC and ASTROGAM



Request on Support Letter from ASTROGAM:

Dear APPEC,

we would like to solicit a support letter from you for ASTROGAM for the currently ongoing ESA Call for a Medium-Class Mission Opportunity [1], to which ASTROGAM was invited to submit a full proposal. ASTROGAM is a multi-purpose MeV to GeV gamma-ray satellite mission proposal designed to cover the so-called MeV gap with unprecedented sensitivity [2]. Scheduled to launch in 2037, it would provide unique broadband electromagnetic coverage from 200 keV up to a few GeV. In the multi-messenger era in the 2030's we feel that such a mission is an essential complement to the grand suite of APP observatories like the Einstein Telescope, CTA, KM3NeT / IceCube-Gen2, etc.

We hope you will support our case on behalf of the European APP community with a letter that we plan to attach to the ASTROGAM proposal to ESA, which is due by mid-July 2022. If possible, we would like to receive support letters by 12 July 2022.

Kind regards, Alessandro de Angelis (PI), David Berge (Co-PI), Vincent Tatischeff (Co-PI)

[1]: ESA Call page: https://www.cosmos.esa.int/web/call-for-missions-2021

[2]: ASTROGAM White Paper written for the ESA Voyage 2050 strategy process: https://arxiv.org/pdf/2102.02460.pdf

→ Should we comply with the request (in parallel with the roadmap process)?

NuPECC Long Range Plan



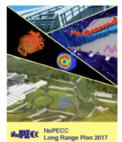


Towards NuPECC Long Range Plan 2024 CONNECT





- The LPR identifies opportunities and priorities for the nuclear science in Europe
- The LRP provides national funding agencies, ESFRI and European Commission with a framework for coordinated advances in nuclear science in Europe





Assessment of Implementation of the NuPECC Long Range Plan 2017

February 2022

LIAISONS: G. AARTS, D. BETTONI, S. COURTIN, P. GIUBELLINO, J. GÓMEZ CAMACHO, A. GÓRGEN, R.-D. HERZBERG, D. IRELAND, B. KRUSCHE, M. LEWITOWICZ, A. MAJ, U. MEISSNER, E. NAPPI, G. NEVENS, L. POPESCU, B. SHARKOV, E. WIDMANN,

Contributors: H. Abele, N. Alahari, W. Barth, D. Bernmerer, K. Blaum, F. Bossi A. Bracco, M. Chiossi, A. Denig, M. Doser, S. Freeman, M. Gazdzicki, F. Gelis, H. Goutte, M. Grecco, M. Harakeh, M. Hori, G. Imbriani, E. Khan, K. Kirch, W. Korten, A. Laird, J. P. Lansberg, D. Lunney, F. Maas, G. Martinez-Pinedo, S. Masciocchi, A. Mengoni, O. Navillat-Cuncic, D. Rifuggiato, P. Rossi, E. Scomparin, J. Simpson, H. Schmieden, O. Schneider, N. Severijns, Th. Stöhlker, J. Stroth, H. Stöhrer, U. Thoma, S. Ulmer, C. A. Ur, C. N. Weinheimer, U. Wicher, H. Wittig



February 2022

http://nupecc.org/2017 LRP A ssessment of Implementation final.pdf NuPECC LRP 2024

Launched in May

NuPECC LRP 2017

http://www.nupecc.org/lrp2 016/Documents/lrp2017.pdf

Marek Lewitowcz

- Dedicated steering committee established (APPEC chair is member of the SC)
- May 2022: Call for inputs from the community [explicitly: also exploring synergies with the particle physics and astroparticle physics communities]. See https://indico.ph.tum.de/event/7050/ deadline October 2022
- January 2023 February 2023: Kick-off meetings of the WG
- November 2023 January 2024: Layout and editing of the LRP Draft, then community feedback
- May 2024: Town Meeting presentation and feedback from the community
- November/December 2024: LRP presentation in Brussels

https://www.astronet-eu.org/





ASTRONET Roadmap

- Feedback to the first section drafts led to a new Panel: Extreme Astrophysics
- 2nd chance of feedback until August 2022: https://www.astronet-eu.org/forums/roadmap-community-consultation
- Sept. 22— Full report circulated to ASTRONET board, research networks and science panels for final input
- Nov/Dec. 22 Publication of ASTRONET Roadmap
- Contacts: Malcolm Booy <u>malcolm.booy@stfc.ukri.org</u>

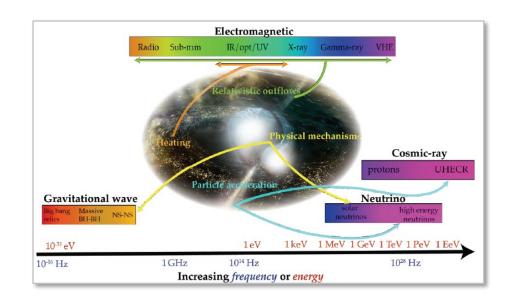
Kamalam Vanninathan – <u>kamalam.vanninathan@stfc.ukri.org</u>

or direct to the panel chairs

Panels / Working Groups (reports available)

- Roadmap preliminary Executive summary
- Roadmap recommendations EAS Meeting
- Origin and evolution of the Universe
- Formation and evolution of Galaxies
- Formation and evolution of Stars
- Formation and evolution of Planetary Systems
- Understanding the Solar System and conditions for Life
- · Computing bid data, high performance computing, data infrastructure
- Societal aspects
- Extreme Astrophysics





SNOWMASS Process





https://indico.fnal.gov/event/22303/



 Berrie Giebels (representative of APPEC in the Snowmass process) will report

https://snowmass21.org/

(all events: https://indico.fnal.gov/category/1098/)

The Snowmass Community Study has 10 frontiers addressing different aspects of the field. They are:

- Energy Frontier,
- Neutrino Physics Frontier,
- Rare Processes and Precision Measurements Frontier,
- Cosmic Frontier,
- Theory Frontier,
- Accelerator Frontier,
- Instrumentation Frontier,
- Computational Frontier,
- Underground Facilities,
- Community Engagement.