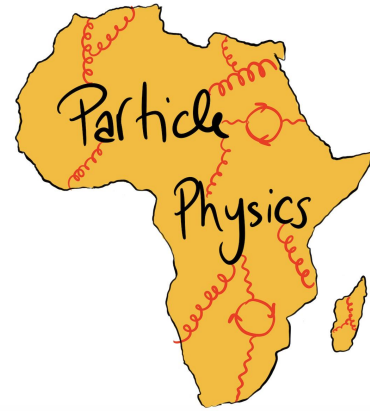


African Strategy for Fundamental Physics
& Applications

Particle Physics Day



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November 18, 2021

African Strategy for Fundamental Physics & Applications

- ASFAP is an opportunity for African particle physicists to come together, identify and document a scientific vision for the future of particle physics in Africa.
- Define the particle physics community's direction for the current decade: identify and prioritize the actions/activities in the coming years.
- This initiative aims at refining Africa needs and capacities in particle physics in order to present them as Letters of Interest (LoI) .

Particle Physics-Working Group

- Build a network of Particle Physicists in Africa.
- Survey of the ongoing PP activities/collaborations in Africa (Experiments & Theory)
- Possibilities of expanding further these involvements in next few years.
- Letters of Interest (LoI)

Ongoing activities @ CERN: Examples

Non-Member States, Territories and Regions Collaborating with CERN

Albania	Algeria	Argentina	Armenia	Australia	Azerbaijan
Bahrain	Bangladesh	Belarus	Bolivia	Brazil	Canada
Chile	China	Colombia	Costa Rica	Cuba	Ecuador
Egypt	Georgia	Ghana	Hong Kong	Iceland	Indonesia
Iran	Ireland	Jordan	Kazakhstan	Korea	Kuwait
Latvia	Lebanon	Madagascar	Malaysia	Malta	Mexico
Mongolia	Montenegro	Morocco	Mozambique	Nepal	New Zealand
North Macedonia	Oman	Palestine	Paraguay	Peru	Philippines
Qatar	Rwanda	Saudi Arabia	Singapore	South Africa	Sri Lanka
Taiwan	Thailand	Tunisia	United Arab Emirates	Uzbekistan	Vietnam

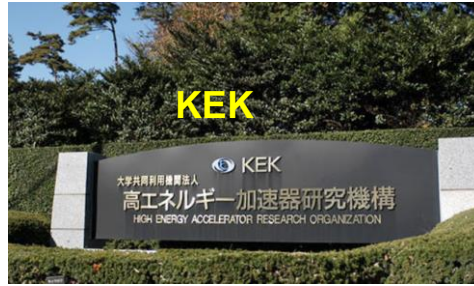
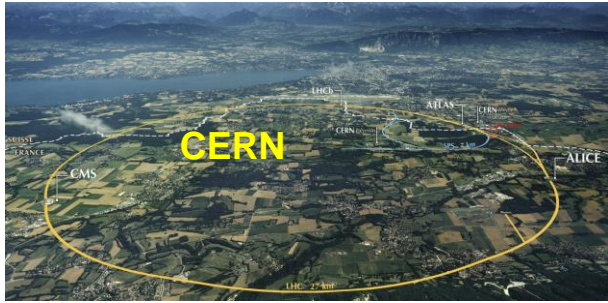
- **Involvement in experiments either full members or associate:**
ATLAS
CMS
Alice
- **Training opportunities:** in LHCb.
- **Computing:** Tier 3 WLCG

Evolution of the level of participation and the implication up to institutional collaborator.

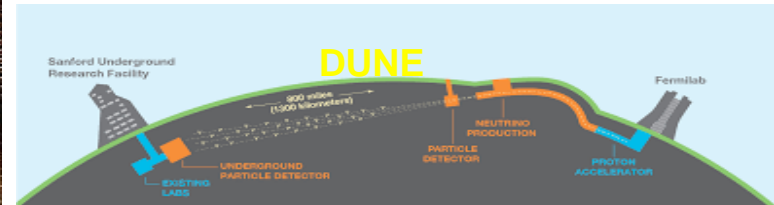
Next steps: extend survey to other facilities

PP - Facilities

Colliders

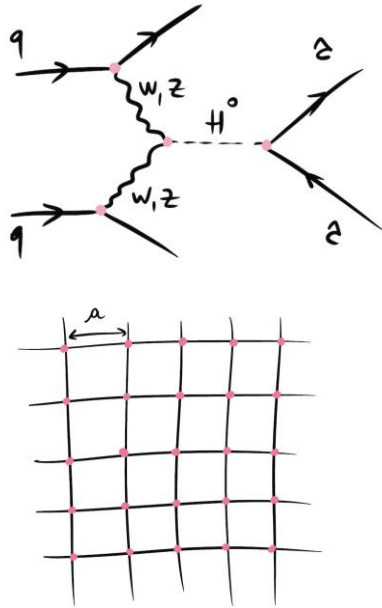


Neutrino experiments

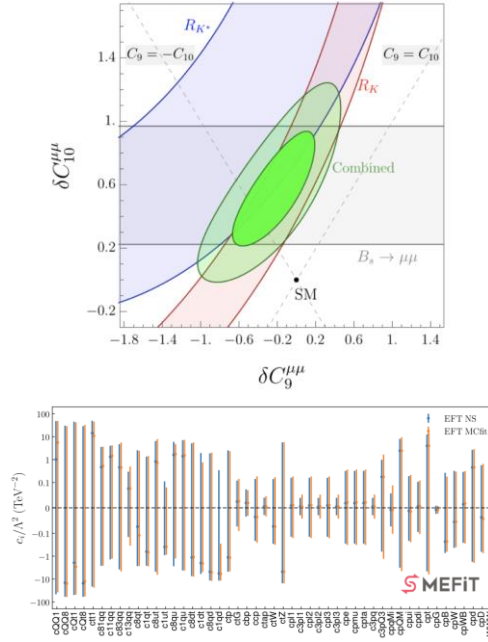


Theoretical Physics

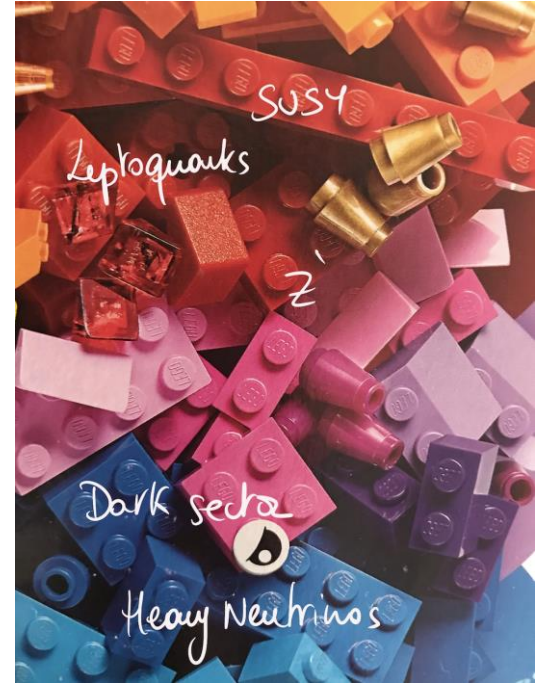
Predictions



Interpretations



Model Building

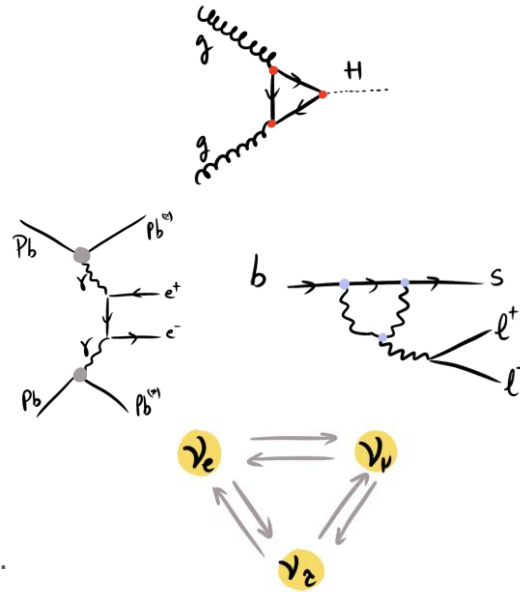


BSM, Generators, Lattice QCD...

EFTs, CKM, PMNS...

Proposed subgroups

- **subWG I “Fundamental constituents & forces”** :
 - Higgs physics.
 - Electroweak and BSM physics.
 - Direct searches.
- **subWG II “Symmetries and composite structures”**:
 - Flavor physics, CP violation.
 - Strong interaction, hadron physics, heavy ions.
 - Indirect searches.
 - nEDM.
- **subWG III “Light messengers”** :
 - Neutrino Physics : neutrino parameters, CP violation, BSM.
- **subWG IV “Infrastructures”** .



Note: For subWG I, II and III we would like to have two conveners: Experimentalist + Theorist.

Particle Physics Conveners



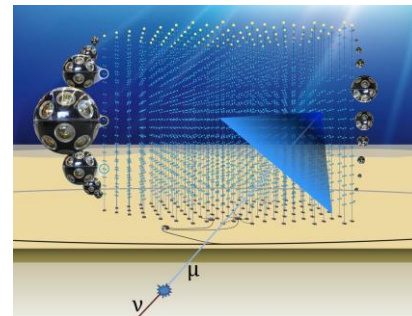
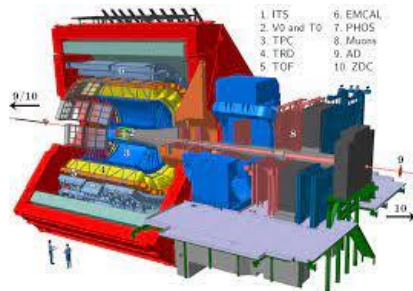
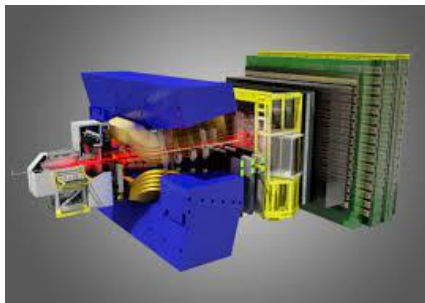
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Where to find us ?

<https://twiki.cern.ch/twiki/bin/view/AfricanStrategy/AfParticlePhysics>

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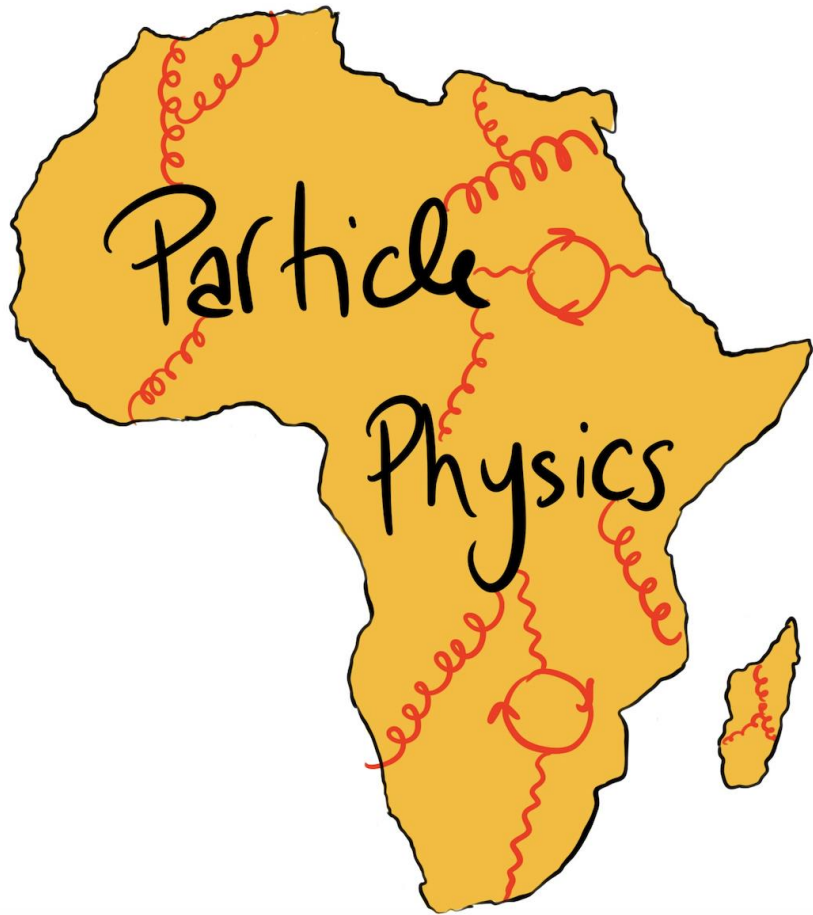
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Conclusion



- Thanks for your contributions to this kickoff-Meeting.
- Next PP meetings will be dedicated to PP activities in other African countries, young African researchers
- Structure for the subWGs: opened a Call for nominations.
- After a first survey of the African activities within CERN.....extend to other facilities, and Theoretical Particle Physics.
- Looking forward to hearing back from you with your LoIs!

Stay tuned.....



Thank you