

Energy Frontier@ AF

AF Meeting, May 27 2020

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Energy Frontier Request

- EF science goals currently envision two types of future colliders (in arbitrary order)
 - Higgs (and other known elementary particles) factory
 - Next high energy frontier machine
- To do physics studies of options, and to make a physics case, machine parameters, and estimates of luminosity and backgrounds are needed from the AF
- Request AF to provide a table with parameters, technical readiness/feasibility, cost, timeframe for start of construction, for various collider options
<https://arxiv.org/abs/2003.09084> (Table V, VII, VII, FIG 42) RMP by Shiltsev & Zimmermann
- Possibly classify them in terms of technical maturity/feasibility & timeframe
 - Short term - ILC, CLIC, HE-LHC, FCC-ee, CepC, LHCeC, EIC, etc.
 - Medium term - FCC-hh, SppC, muon-collider, etc.
 - Longer term - gamma-gamma collider, plasma collider ...
 - The medium and long term options may not become mainstream by the time of Snowmass/ report P5, while help to justify continuing R&D on specific options

Energy Frontier

- An important aspect is the community participation. While we can help find resources, the drive/enthusiasm to perform the study needs to come from a group interested in promoting these options:
 - Monte Carlos need at least some beam parameters, e.g interaction point, luminosity, and beam backgrounds etc...
- Propose a half day joint community meeting of EF & AF
 - Focussed on AF ideas and introduce machines
 - Only talks from representatives of different colliders
 - Date: July 1, or June 24