

Questions for: Energies Beyond LHC

1. Can we design a detector to measure physics events at a 100 TeV pp collider and a luminosity of 10^{35} ? Where are the limits in energy and luminosity beyond which solutions do not currently exist?
2. We do not know how to create superconducting magnets at industrial scale with fields above about 16 T. Is any solution on the horizon?
3. Muon colliders have been promised for many years but muon cooling still has not delivered more than 10% phase space reduction. A muon collider needs phase space reduction by 10^6 . What is the path to get there?
4. Exotic acceleration mechanisms for electrons have been demonstrated to give accelerations of GeV/m and even tens of GeV/m. But these devices operate with low efficiency both in power use and in throughput of particles. Is there a path to an accelerator based on these technologies that will deliver high luminosity and TeV energies?