

Introductory remarks

João Guimarães da Costa

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中国科学院高能物理研究所

*Institute of High Energy Physics
Chinese Academy of Sciences*



CEPC-related Events

- **CEPC Day, Monday Oct 19**
 - Session in the afternoon in Beijing
- **CEPC international workshop on Oct. 26-28, 2020**



IAC Recommendations

Recommendation 15:

- *Engage engineering expertise to assess various engineering aspects of the detector options under study (supports, low mass aspects of the vertex and tracking detectors, heat dissipation and integration of cooling, low-mass services and service routing, influence of the magnetic field on the design, etc.). Engineering expertise helps also to enhance the credibility of the cost estimates.*
- *Reinforce detector studies in the forward region at the interface of the accelerator. Optimize the luminosity measurement, compatible with expected statistical errors on the physics, through optimal design, integration and alignment of LumiCal. Perform advanced engineering studies on the overall design of the complex forward MDI region, taking all constraints into account.*
- *Study whether the TPC is compatible with the high rates expected for operation at the Z-peak, including ion backflow, electronics readout and DAQ schemes.*
- *Study the impact of the choice of the solenoid field (2T or 3T) at all foreseen CEPC center-of-mass energies. Draw conclusions on the detector design and performance (in particular the TPC), taking the impact on the beams and the CEPC luminosity performance into account. Preferably make a final choice of the recommended magnetic field for both CEPC detectors at the earliest possible time.*
- *Continue to pursue studies of the solenoid yoke in view of magnetic stray fields and their influence on the booster beams and on other surrounding equipment.*
- *Reinforce efforts towards an engineering design of the IDEA detector (including engineering details of the dual readout calorimeter) and implement the corresponding design in the event simulation and reconstruction software.*



IAC Recommendations

Recommendation 16:

- *Perform detailed simulation studies to better understand the physics needs from the detector at the various CEPC energy stages; draw consequences about the corresponding detector performance requirements (e.g. photon resolution, jet resolution, added value of PID) and study how this influences the detector design.*
- *Study the physics case for performing flavor physics including the tau lepton at the Z-peak. Draw conclusions on a possible impact on the detector design.*
- *Given that time-of-flight detectors with a time resolution in the 30-50 ps are becoming available, study their potential added value for a CEPC detector by assessing a few key physics benchmarks.*
- *Assess the added value of dE/dx capabilities in the tracker.*
- *Assess the added value of the muon detector system. As a result, define the number of muon detection layers to include, together with their required performance.*



IAC Recommendations

Recommendation 17:

- *Set up a logical structure in Indico for specialized meetings (e.g. for specific sub-detectors, software development, detector design and engineering, physics studies, etc.). Schedule regular meetings among experts.*
- *Set up a system of internal technical notes, as well as a corresponding internal reviewing process.*
- *Set up a system for reviewing/rehearsing public CEPC presentations.*
- *Set up a (simple) structured public web page / work space where links to working groups, meetings, technical documents, software documentation, public presentations etc. can be found. Include instructions for joining the corresponding mailing lists.*