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Indian Participation in LHC and a Glimpse of the Road Ahead

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Indian high energy physicists have been using overseas research facilities for a long time especially those at CERN. In 1991, Indian DAE brought such collaborations under an institutional framework and entered into a 10 year cooperation agreement with CERN, which later helped India join the LHC program with an expanded objective. Besides participating in detector development and physics studies, India agreed to contribute to accelerator construction, where RRCAT (earlier known as CAT, Indore) was the lead Indian institution. The 1991 cooperation agreement was extended for another 10 years and new protocols were added enabling Indian participation in the LHC Computing Grid Developments and, recently, to Indian involvement in hardware for CLIC Test facility 3 and LINAC-4. Successful India-CERN collaboration in accelerator construction has led to further Indian linkage to other international accelerator related projects such as FAIR and ILC. The talk will give an overview of the Indian contributions, benefits that have resulted through them, as well as a peek into collaborative programs for upcoming and also future projects.