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J-PARC Heavy Ion Experiment

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J-PARC Heavy Ion project(J-PARC-HI) is a future fixed target experiment to study the properties of the dense matter created by the heavy ion collisions with 1-12 AGeV/c at J-PARC. The search for the QCD phase boundary and the critical end point is one of the important topics to understand the nature of QCD phase transition. It is also of interest to study the equation of state of the dense matter at J-PARC, where the density of the matter is similar with that of neutron star and neutron star merger.

For this purpose, the high intensity beam and the precision detector with high speed DAQ is necessary. J-PARC will be upgraded to produce the world highest heavy ion beam with adding a new compact heavy-ion linac and a booster ring, and utilizing the current RCS and MR synchrotrons. We will construct the multi-purpose spectrometer with large acceptance to measure dileptons, photons and hadrons, and their correlations and fluctuations.

In this presentation, we will report the current status of the project, the design of the detector configuration, and detector R&D status.

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