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The hadron collider studied in the future circular collider (FCC) project could operate with protons and lead nuclei in similar modes to the LHC. Considering the current baseline assumptions for the proton-proton program, this paper updates and extends previous studies investigating the potential performance in lead-lead and proton-lead collisions. Beam parameter and luminosity evolution, as well as estimates for the integrated luminosity are given. The secondary beams produced by bound-free pair production in heavy-ion collisions would carry several kW of power and it is therefore crucial to include countermeasures in the initial accelerator design. Preliminary studies of this key aspect of heavy-ion operation are presented.

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