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QCD opportunities with forward neutrinos during the HL-LHC phase MARIA VITTORIA GARZELLI, University of Hamburg — Several pilot experiments have been proposed and/or are already under construction, capable of exploiting forward beams of neutrinos produced in pp collisions at the LHC, that propagate towards detectors located at several hundred meters from the interaction point. These experiments are equipped with detectors where interaction cross-sections of these highly energetic neutrinos are measured. The possibility of increasing the size of these detectors and building a Forward Physics Facility capable of hosting a number of them during the High Luminosity phase of LHC is currently under investigation. I focus on the QCD opportunities offered by such a possibility, in particular I show how measuring the fluxes and composition of the neutrino beams and their interactions at the detector site offers unique opportunities to constrain various non-perturbative QCD aspects, in the hypothesis that new-physics particles do not play a relevant role in the production, propagation and interaction of these neutrinos.

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