Abstract Submitted
for the APR12 Meeting of
The American Physical Society

QCD and EW corrections in exclusive events at the LHC MARIA BEATRIZ GAY DUCATI, GUSTAVO SILVEIRA, Instituto de Física-UFRGS-Brazil — The Higgs boson production is investigated in proton-proton collisions at next-to-leading-order accuracy in central exclusive diffractive processes at the LHC. The production process by the double Pomeron exchange is analyzed in the diffractive factorization through the Ingelman-Schlein approach, taking into account the parton content of the Pomeron by the diffractive partonic distribution function provided by the H1 Collaboration. Hence, we estimate the production cross section of the Higgs boson as well as its rapidity distribution for distinct energies of the LHC. Also, we include the gap survival probability in our calculation, which is studied in recent works and expected to lie in the range between 1% and 5% for the energy regime of 14 TeV. As a result, we found a production cross section of about 0.3–0.8 (1.2–3.7) fb at 7 (14) TeV, being of the same order as predicted by the two-photon and the Balitsky-Fadin-Kuraev-Lipatov Pomeron mechanisms. Therefore, assuming the selection rules of spin-parity properties, the exclusive production is a promising channel for the Higgs boson detection in the LHC.

Maria Beatriz Gay Ducati
Instituto de Física-UFRGS-Brazil

Date submitted: 09 Jan 2012 Electronic form version 1.4