Electroweak physics at the LHC

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Abstract. The Large Hadron Collider (LHC) has completed in 2012 its first running phase and the experiments have collected data sets of pp collisions at center-of-mass energies of 7 and 8 TeV with an integrated luminosity of about 5ifb and 20ifb, respectively. Analyses of these data sets have produced a rich set of results in the electroweak sector of the standard model. This article reviews the status of electroweak measurements of the ATLAS and CMS experiments at the LHC and discusses phenomenological developments in the electroweak sector.

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ATLAS [1] CDF [2] CMS [3] D0 [4] LHCb [5]

ATLAS high-mass Drell–Yan [6] ATLAS low-mass Drell-Yan [7] ATLAS Z PT [8] ATLAS Z phistar [9] ATLAS Wgamma Zgamma [10] ATLAS WW 7 TeV [11] ATLAS WW 8 TeV [12]

CDF Z asymmetry muon [13] CDF Z asymmetry electron [14] CDF W mass PRD [15] CDF W mass PRL [16]

CMS Drell–Yan 7 TeV [17] CMS W asymmetry muon [18] CMS W asymmetry electron [19] CMS W+charm [20] CMS ZZ4l 8 TeV [21] CMS ZZ4l 7 TeV [22] CMS WW/ZZ 8 TeV [23] CMS WW2l2n 7 TeV [24] CMS WWlnjj 7 TeV [25] CMS WVgamma 8 TeV [26] CMS Wgamma/Zgamma 7 TeV [27] CMS Znngamma 7 TeV [28] CMS WWexcl 7 TeV [29] CMS VBF Z 7 TeV [30] CMS SSWW 8 TeV [31]

D0 W asymmetry electron [32] D0 W asymmetry muon [33] D0 W mass PRD [34] D0 W mass PRL [35]

CDF+D0 W mass combination [36]

Snowmass electroweak [37]

Wmass PDF [38]

ATLAS WW scattering [39] ATLAS VBF Z [40]

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