Forward physics at the LHC

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The total cross section in pp collisions at the LHC is a fundamental parameter of strong interactions that can't be calculated in perturbative QCD but still can be measured from the Optical Theorem using elastic scattering. In this seminar a recent measurement of the total cross section at 7 TeV from the ATLAS Collaboration using the ALFA Roman Pot detector will be presented and compared to measurements from the TOTEM collaboration. Further forward physics topics in diffraction will be discussed as well as a possible calibration of the absolute luminosity from elastic scattering. Finally an outlook on the measurements planned at Run 2 of the LHC and an overview of the planned upgrades of the forward instrumentation will be given.