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The talk includes some of the current working areas of the La Plata group in the ATLAS experiment. The trigger is one of the essential pieces of the ATLAS detector. The e/γ trigger performance studies to understand, improve and also provide the trigger efficiency to the precision analyses and searches for new physics are presented. Next step in the chain towards data analysis is the reconstruction of the physics objects. In particular, the electron and photon isolation are discussed. After the Higgs discovery, the interest of the group moved towards its characterisation. Spin, CP properties and cross-section studies in the Higgs decaying into photons analyses are summarised. Within the BSM theories, like NMSSM, the light Higgs boson could have different exotic decays that are being explored. Events containing photons and missing energy (plus jets or leptons) are distinctive signatures of SUSY models with gauge-mediated supersymmetry breaking. Several searches for SUSY with different final states are presented as well as prospects for discovery with the full Run 2 dataset.

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