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Search for chargino and neutralino production in final state with three leptons and missing transverse momentum, via WH intermediate decays

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The direct production of chargino-neutralino, $pp \rightarrow \tilde{\chi}^{\pm 1} \tilde{\chi}^0_2$, followed by their decays via intermediate WH states ($\tilde{\chi}^{\pm 1} \tilde{\chi}^0_2 \rightarrow W^{\pm} H \tilde{\chi}^0_1 \tilde{\chi}^0_1$), where H is the 125-GeV Standard Model Higgs boson, is a very important channel for the search for electroweak supersymmetry at the Large Hadron Collider. Amongst others, the search can be performed in the channel where both the W and the H decay fully leptonically ($\tilde{\chi}^{\pm 1} \rightarrow \tilde{\chi}^0_1 (W^{\pm} \rightarrow \ell^{\pm} \nu)$ and $\tilde{\chi}^0_2 \rightarrow \tilde{\chi}^0_1 (H \rightarrow \ell \ell)$), yielding three leptons in final state. Results are presented from this search using 36.1 fb⁻¹ of $\sqrt{s}=13$ TeV proton-proton collision data recorded with the ATLAS detector, together with an outlook for the full Run-2 analysis.

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