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## Prospects for $t\bar{t}Z$ measurements at ATLAS with the full $140 \text{ fb}^{-1}$ Run 2 dataset

*Monday 8 April 2019 14:00 (15 minutes)*

We review the recent measurement of the inclusive  $t\bar{t}Z$  cross-section with  $36 \text{ fb}^{-1}$  of data at 13 TeV at the ATLAS experiment, using EFT considerations and background modelling for generic SUSY/DM searches as motivation for continuing to improve the precision of this result. We then present plans for a differential  $t\bar{t}Z$  measurement in the 3 and 4 lepton channels with the full  $140 \text{ fb}^{-1}$  Run 2 dataset, and highlight a number of promising research directions, such as a re-interpretation in terms of  $t\bar{t}Z$  spin correlation observables, or the possibility to unfold SUSY/DM validation regions (or even null-result signal regions) to constrain the  $t\bar{t}Z(\nu\nu)$  process. Particular attention is also given to the topic of semi-leptonic top reconstruction, necessary to match the performance of the dileptonic decay channels.

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