

Figure 8: Exclusion contours for the Z' -2HDM scenario in the $(m_{Z'}, m_A)$ plane for $\tan \beta = 1$, $g_{Z'} = 0.8$, and $m_\chi = 100$ GeV. The observed limits (solid line) are consistent with the expectation under the SM-only hypothesis (densely dashed line) within uncertainties (filled band). Observed limits from previous ATLAS results at $\sqrt{s} = 13$ TeV (dash-dotted line [19]) are also shown.

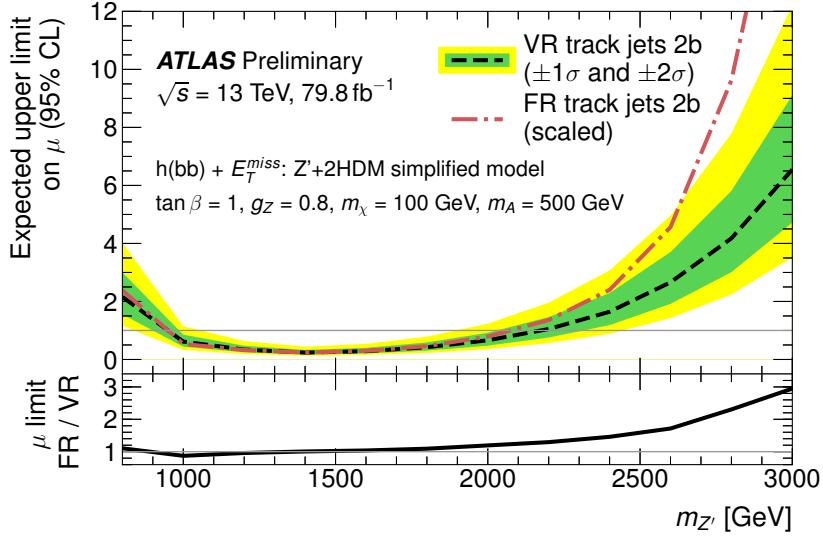


Figure 9: Comparison of the expected upper limits on the signal strength μ for the analysis using variable-radius (VR) track-jets (dashed line) against the previous iteration of the analysis performed with fixed-radius (FR) track-jets (dash-dotted line) with two b -tagged jet and scaled to 79.8 fb^{-1} , for fixed $m_A = 500$ GeV and different values of $m_{Z'}$ of the Z' -2HDM benchmark model. Other differences between the two analyses include the suppression of the multijet background using the object-based E_T^{miss} significance, reduced uncertainties from the MC statistics, and the improve calibration of the b -tagging efficiency in the VR analysis. The lower panel is the ratio of the upper limits, showing a significant improvement in the high $m_{Z'}$ region.