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Phase space correlations of 13 TeV gluino and squark searches in the pMSSM

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How does sensitivity designed around simplified models map onto realistic R-parity conserving supersymmetry scenarios? The 19-parameter p(henomenological)MSSM accounts for non-LHC constraints, and we interpret six 13 TeV 3.2/fb ATLAS searches for gluinos and squarks as a case study. We analyse previously unexplored correlations of the most sensitive analyses and find striking complementarity between searches. In leptonic channels, we reveal sensitivity to decay chains beyond those used in analysis design. Further, we ascribe dark matter interpretations to each ATLAS search by examining their correlations in the phase space of direct detection experiments.

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