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Z'-explorer: confronting Z' models against LHC data

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We introduce the Z'-explorer software, a new tool to probe Z' models using available visible decay channels at the LHC. This tool scrutinizes the parameter space of a model to determine which part is still allowed, which will soon be proved, and which channel is the most sensitive in each region of parameter space. The user does not need to implement the model nor run any Monte Carlo simulation, but instead just needs to specify the Z' mass and its couplings to SM particles. The output of the program condenses the main phenomenological features of the model, the experimental techniques, and the existing search strategies in each decay channel. We also present the progress made for the next update of the program (Z'-explorer 2.0), which will include Z' decay to dark matter, and we highlight the main points for the (re)interpretation of the latest ATLAS monojet search at 13 TeV.

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