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Simplified Models Expose the Interplay of Direct and Indirect Searches

We propose to use Simplified Models as a tool to investigate the new physics potential of both direct and indirect searches at the LHC and future colliders. This approach leads to more transparent interpretation and reframes questions of theoretical validity in terms of concrete models. A number of examples are given to illustrate the utility of this approach. By way of three characteristic examples, we argue that the region where indirect searches that rely on SMEFT interpretations are the most powerful probes often correspond to a strong coupling limit of the associated Simplified Models. This approach allows for a robust comparison among different future collider options, where the model assumptions can be made very precise.

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