

# Flash talk: Theorists recasting LHC results

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# Recasting: overview

## LHC search

- signal regions (object definitions, cut-flows, etc.)
- SM backgrounds (number of background events in the SR)
- new model prediction (number of signal events in the SR)
- limited number of NP models included in the exp. search

## Recasting

- “all” one has to do is to find a prediction of a different model in a given signal region
- mimic the LHC analysis on a new MC sample or...
- possibly evaluate no. of signal events (sami-)analytically

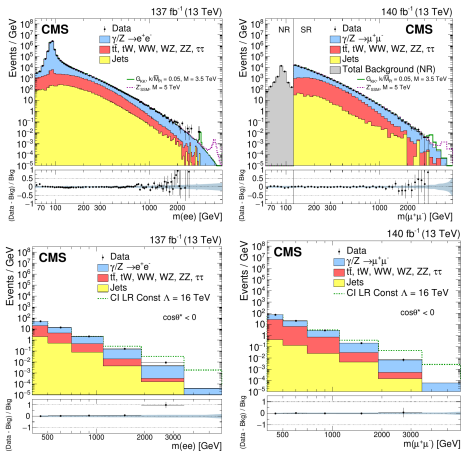
# Nonresonant signatures in dilepton tails

- CMS search in high-mass  $ee$  and  $\mu\mu$  final states [arXiv:2103.02708]
- bounds on four-fermion contact interactions

$$\mathcal{L}_{q\ell} = \frac{g_{\text{contact}}^2}{\Lambda^2} \left[ \eta_{LL} (\bar{q}_L \gamma^\mu q_L) (\bar{\ell}_L \gamma_\mu \ell_L) + \eta_{RR} (\bar{q}_R \gamma^\mu q_R) (\bar{\ell}_R \gamma_\mu \ell_R) \right. \\ \left. + \eta_{LR} (\bar{q}_L \gamma^\mu q_L) (\bar{\ell}_R \gamma_\mu \ell_R) + \eta_{RL} (\bar{q}_R \gamma^\mu q_R) (\bar{\ell}_L \gamma_\mu \ell_L) \right]$$

- flavour universal lagrangian  $\rightarrow$  decompose into flavourful effective operators such as  $(\bar{s}_L \gamma_\mu b_L) (\bar{\mu}_L \gamma^\mu \mu_L)$
- obtain bounds on specific Wilson Coefficients

# Nonresonant signatures in dilepton tails



**Thank you for you attention :)**