

# XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



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## Event-Based Jet Vetoes: A new prospect for multi-lepton searches at the LHC

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High- $p_T$ , multi-lepton events remain one of the most sensitive probes of new physics at the LHC. Despite this, multi-weak boson and top quark-associated production channels remain leading Standard Model backgrounds for these signatures. We present a new class of jet vetoes, one that is defined on an event-by-event basis, that precisely targets these so-called irreducible backgrounds and can significantly improve signal-over-background significance. The veto exhibits somewhat desirable theoretical properties and suggests a lesser need for high order jet veto resummation. Applications to searches for lepton number and lepton flavor violation at  $\sqrt{s} = 14$  and 100 TeV are shown.

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