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A weakly constrained W' at the early LHC

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We discuss, within an effective approach, the phenomenology of a charged W' vector transforming as an iso-singlet under the Standard Model gauge group. Firstly, we present bounds from current data, finding that these are quite weak for suitable choices of the right-handed quark mixing matrix. Then, the resonant production at the early LHC of such a weakly constrained W' is discussed. We start by estimating the reach in the dijet final state, which is one of the channels where a W' signal would first appear, and then we analyse prospects for the more challenging discovery of W' decays into W gamma and WZ. We show in particular that the former can be used to gain insight on the possibly composite nature of the resonance.

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