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Maximizing Gauge Boson Identification Reaches in e^+e^- Collisions via Proper Selection of Beam Polarization ALI BAGNEID, Umm Al-Qura University — Most extensions of the standard model predict the existence of extra neutral gauge bosons. These particles can manifest themselves in e^+e^- collisions via small deviations of various physical observables from the corresponding standard model values. We considered leptonic observables and showed that the size of these deviations can be controlled by the proper selection of the polarizations of the positron and electron beams. We determined, for a given extension, a single set of beam polarization so that if this set is employed in measuring all considered leptonic observables, it produces maximum gauge boson identification reaches.

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