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Search for a scalar or vector particle decaying into Zg in $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV RUSS AVERIN, Augustana College, D0 COLLABORATION — We present a search for a narrow scalar or vector resonance decaying into Zg with subsequent Z decay into a pair of electrons or muons. The data for this search were collected with the D0 detector at the Fermilab Tevatron ppbar collider at a center of mass energy of 1.96 TeV. Using about 1 fb^{-1} of data, we observe 49 (50) candidate events in the electron (muon) channel, in good agreement with the standard model prediction. From the combination of both channels we derive 95% C.L. upper limits on the cross section times branching fraction into Zg. These limits range from 0.19 (0.20) pb for a scalar (vector) resonance mass of 600 GeV/c^2 to 2.5 (3.1) pb for a mass or 140 GeV/c^2.

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