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**Search for Higgs boson decays to beyond-the-Standard-Model light bosons in four-lepton events with the ATLAS detector at $\sqrt{s}$ = 13 TeV** RONGKUN WANG, Univ of Michigan - Ann Arbor, ATLAS COLLABORATION — A search is conducted for a new beyond-the-Standard-Model boson using events where a Higgs boson with mass 125 GeV decays to four leptons (l = e or $\mu$). This decay is presumed to occur via an intermediate state which contains one or two on-shell, promptly decaying bosons: H $\rightarrow$ ZX/XX $\rightarrow$ 4l, where X is a new vector boson Zd or pseudoscalar a with mass between 1 and 60 GeV. The search uses proton-proton collision data collected with the ATLAS detector at the LHC during 2015 and 2016, with an integrated luminosity of 36.1 $fb^{-1}$ at a centre-of-mass energy $\sqrt{s}$ = 13 TeV. No significant excess of events above Standard Model background predictions was observed; therefore, upper limits at 95 % confidence level are set on model-independent fiducial cross-sections, and on the Higgs boson decay branching ratios to vector and pseudoscalar bosons in two benchmark models.

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