A Search for Excited Fermions at HERA

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A direct search for excited fermions is performed in the H1 experiment at HERA using 1994→1997 data corresponding to an integrated luminosity of 37 pb^{-1}. The search covers all electroweak decays of the e^*, q^* or ν_e^* into a lepton and a γ, a Z or a W gauge boson. The decay of the Z and W gauge bosons leads to a variety of possible event topologies. No significant excess above the expectation from the Standard Model is found in channels involving high P_T photon's, or first generation leptons, or multijets and missing P_T. From these channels, exclusion limits are derived which extend beyond the excited fermion mass reach of other existing colliders.