The Decay $\Sigma^+ \to p\mu^+\mu^-$ and Possible New Physics from HyperCP

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The Fermilab HyperCP (E871) experiment collected on the order of 10^{10} hyperon decays in 1997 and 1999 runs. Using the data for 1999 run, we will report on the observation of events with reconstructed masses consistent with that of Σ^+ assuming the final state $p\,\mu^+\,\mu^-$. The observed events would be the rarest decay ever observed in the baryon sector. Possible interpretations of the observed events will be discussed. Finally we will present a speculation for a new physics scenario.