

PerAPS

2025

MERCOLEDÌ 8 OTTOBRE



A.D. 1308

unipg

DIPARTIMENTO
DI FISICA E GEOLOGIA

ORE 15:00 - AULA A



Observation of the very rare

$\Sigma^+ \rightarrow p\mu^+\mu^-$ decay

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The $\Sigma^+ \rightarrow p\mu^+\mu^-$ decay is observed for the first time at the LHCb experiment. This is a flavour changing neutral current sensitive to physics beyond the Standard Model, which could modify its properties. In particular the HyperCP experiment years ago presented an evidence of this decay with a hint of a possible unknown intermediate particle. This new measurement presents a highly significant observation and a measurement of its integrated branching fraction and dimuon invariant mass distribution. This is the rarest baryon decay ever observed.

