

Venerdì
17 luglio
Aula A, ore 11:00



Flavour Changing Neutral Current decays at LHCb

Flavour Changing Neutral Current (FCNC) decays are among the most sensitive probes of physics beyond the Standard Model (SM). Forbidden at tree level, these processes can only proceed through electroweak loop diagrams, making their branching fractions, angular distributions, and other observables highly responsive to potential contributions from new particles or interactions.

These rare transitions can be elegantly described within an effective field theory framework, where short-distance effects are encoded in the Wilson coefficients. Precise measurements of these observables, together with lepton-flavour-universality ratios, therefore provide stringent tests of the SM and powerful constraints on New Physics scenarios.

Benefiting from the abundant production of beauty and charm hadrons at the LHC, combined with excellent vertexing, tracking, particle-identification, and trigger capabilities, the LHCb experiment plays a leading role in this sector. This seminar will give an overview of recent FCNC measurements and searches and will discuss their interpretation within the broader flavour-physics programme. Prospects offered by the upgraded detector and the growing Run 3 dataset will also be highlighted.



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