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Studies of the CKM matrix with semileptonic decays

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Exclusive semileptonic b-hadron decays are under good theoretical control, which allows precise determinations of the CKM matrix elements, Vub and Vcb. The large production of Lambda_b baryons and Bs mesons at the LHC allows LHCb to provide complementary information with respect to the B-factories in this sector, as well as in the measurement of the shape of the Lambda_b differential decay rates. An alternative approach for measuring Vub, less affected by theoretical uncertainties, is through fully leptonic decay modes. Also this approach is explored at LHCb with the search for the B+->3munu decay. At the same time, novel experimental techniques are used to measure the fraction of semileptonic B+ to charm meson decays, in order to improve the understanding of the inclusive charm semileptonic rate and the background description for analyses exploiting exclusive b -> c and b->u transitions. The latest LHCb results on CKM matrix element determination and related measurements and searches are presented.

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