

Determination of V_{ub} using the decay $\Lambda_b \rightarrow p \mu \nu$

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The magnitude of the matrix element V_{ub} is one of the fundamental parameters of the Standard Model (SM). Consistency checks of these parameters is one of the best ways to search for physics beyond the SM. Past measurements using inclusive and the exclusive b-hadron decays have resulted in significantly different results (known as the $|V_{ub}|$ puzzle). This seminar will report the first measurement of $|V_{ub}|$ at a hadron collider and the first using a baryon decay, performed using the decay $\Lambda_b \rightarrow p \mu \nu$.

The measurement achieves a relative precision of 7.3%, which is more precise than any existing published exclusive measurements.