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[344] Towards a measurement of the differential decay rate of the decay $B^+ \rightarrow \rho^0 \mu^+ \nu_\mu$ at LHCb

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A long standing tension between measurements of the CKM matrix element V_{ub} in inclusive and exclusive decays can be eased by introducing a small right-handed weak current.

By measuring the differential decay rate of the semileptonic decay $B^+ \rightarrow \rho^0 \mu^+ \nu_\mu$, using data from the LHCb experiment, a bound on a possible right-handed weak current can be set. This talk will focus on the first steps of the analysis where a new signal-reconstruction approach has been studied. The development and performance of a multivariate algorithm used to separate signal and background will also be presented, and finally, the status and future steps of the analysis will be discussed.

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