

A new determination of the $|V_{ud}|$ quark mixing matrix element

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Recently, a complete analysis of the half-lives and branching ratios for the beta transitions between isospin $T = 1/2$ isospin doublets in mirror nuclei, together with detailed calculations of the radiative, isospin-symmetry breaking and nuclear structure corrections, have provided the corrected Ft -values for these mirror transitions up to $A = 45$.

Combining these Ft -values with results from correlation measurements that were performed with several of these mirror nuclei provides a new and independent source for the determination of the quark mixing matrix element $|V_{ud}|$.

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