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Experimental Review on Vus extraction from Kaon decays

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At present, the first-row constraint, $|V_{ud}|^2 + |V_{us}|^2 + |V_{ub}|^2$ = 1 (with $|V_{ub}|^2$ negligible), offers the most precise test of CKM unitarity.
Up until 2002 (and for the 2004 PDG evaluation), the evaluation of $|V_{us}$ from older K_{l3} data gave 2.3σ hint of unitarity violation in the first-row test. The 2003 measurement of BR(K^+_{e2}) by BNL E865 gave a value for $|V_{us}|$ consistent with unitarity. In the period 2004-2006, many new measurements of BRs, lifetimes, and form-factor slopes were announced by KLOE, KTeV, ISTRA+ and NA48. All of these new measurements are distinguished from the older measurements in that they are based on much higher statistics, and in that radiative corrections are applied consistently. The 2006 PDG review on $|V_{us}$ includes many, but not all, of these important developments. I will present an up-to-date evaluation that includes preliminary results presented at this conference.

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