Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Precision Q_{EC}-value measurement of ^{23}Mg for testing the CKM matrix unitarity[1] MAXIME BRODEUR, University of Notre Dame, BRAD SCHULTZ, JENS DILLING, TRIUMF, TITAN COLLABORATION — We report a new direct measurement of the ^{23}Mg β^+-decay transition energy Q_{EC} using the TITAN Penning trap mass spectrometer. This value agrees with the latest atomic mass evaluation while being four times more precise. The increase in precision changes the uncertainty contribution of the Q_{EC}-value on the statistical rate function f_v from 11% to 0.6%, an improvement by a factor of 18. This enables a more robust determination of the corrected Ft-value of this mirror transition to the required precision, making possible further test of the CKM matrix unitarity.

[1]Natural Sciences and Engineering Research Council of Canada

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Date submitted: 19 Jun 2014 Electronic form version 1.4