

Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Neutralizer for TRIUMF's experiment for measurements of parity non-conservation in francium¹ ALEXANDRE GORELOV, J.A. BEHR, M.R. KALITA, M.R. PEARSON, M. TANDECKI, TRIUMF, D. L. TRIUMF, Carleton University, S. AUBIN, College of William and Mary, R. COLLISTER, A.C. DEHART, G. GWINNER, U. of Manitoba, E. GOMEZ, Univ. Autnoma de San Luis Potosi, L.A. OROZCO, J. Z, Joint Quantum Institute, Univ., of Maryland and NIST — The experiment at TRIUMF for measurements of parity non-conservation (PNC) effects in magneto-optically trapped (MOT) isotopes of francium to test the Standard Model at low energies underwent significant development. In particular, we have overhauled the design of the neutralizer, which catches ionized atoms from the ISAC radioactive beam facility and releases them in neutral form for trapping. We have adopted the design idea, proposed by group of researchers from State University of New York, Stony Brook. It assumed sequential collecting of radioactive species on cold foil, transport them to capture cell and release during short time heating of the foil. We have modified original electric connections to the foil, the way of mounting foil and replaced yttrium foil by zirconium one, more robust. Such modifications allowed us to ensure an operation of the neutralizer through more than 500,000 cycles (this makes possible continuous taking of data during 2 months) with the release about 10% of embedded atoms per cycle.

¹This work is supported by the DOE and NSF (USA), CONACYT (Mexico) and NSERC (Canada). TRIUMF receives federal funding via a contribution agreement with the National Research Council of Canada.

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Date submitted: 06 Jul 2016

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