Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Ultracold Neutrons in Canada and Japan[1] JEFFERY MARTIN, The University of Winnipeg — When neutrons are taken out of atomic nuclei and cooled down, they have weird properties: they bounce off walls, they can be stored in magnetic bottles, and they form quantized energy levels in Earth's gravitational field. Once they've been trapped using such methods, their properties can be studied very carefully to search for deviations from expectations based on the standard model of particle physics. If a deviation is found, it would signify new physics beyond the standard model. We are building a new source of ultracold neutrons in Canada (at TRIUMF, Vancouver, BC) with the help of collaborators from Japan (Masuda, et al). The source is projected to provide the highest density of ultracold neutrons ever produced in the world, and we'll use the neutrons to push some very interesting physics experiments to unprecedented levels of precision, as I'll describe.

[1]Research supported by NSERC, CFI, and JSPS.

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Date submitted: 02 Jul 2009 Electronic form version 1.4