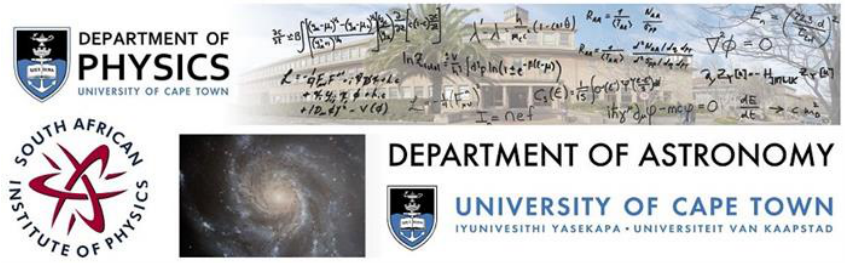

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Towards quantum feedback measurements with trapped Yb+ ions

Thursday, 7 July 2016 11:10 (20 minutes)

Abstract content
   (Max 300 words)
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Trapped and laser-cooled atomic ions have allowed unprecedented precision in experiments ranging from atomic clocks, probes for fundamental physics, and the development of a quantum computer. In conventional protocols quantum states are probed with projective measurements thus collapsing the quantum wavefunction such that the experiment has to be restarted repeatedly to gather statistics. An alternative measurement method exploits so-called unsharp measurements which allow coherence to persist at the price of reduced information gain per measurement. We report steps towards realization of such measurements with trapped Yb+ ions, and prospects for precision measurement experiments based on the protocol.

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Hermann Uys, huys@csir.co.za

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Primary author: Dr KHANYILE, Ncamiso (Department of Physics, Stellenbosch University)

Co-author: Dr UYS, Hermann (National Laser Centre, CSIR/Department of Physics, Stellenbosch University)

Presenter: Dr KHANYILE, Ncamiso (Department of Physics, Stellenbosch University)

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