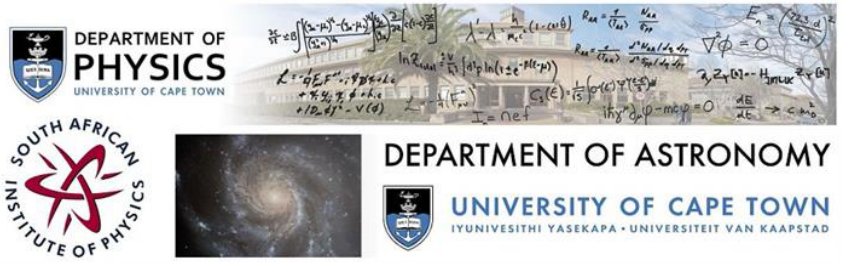

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Dynamics and thermodynamics of open quantum Brownian motion

Friday, 8 July 2016 10:20 (20 minutes)

Abstract content
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Open quantum Brownian motion was introduced as a scaling limit of Open Quantum Walks and is a new type of quantum Brownian motion for Brownian particles with internal quantum degrees of freedom. We use a particular example of the microscopic derivation of open quantum Brownian motion [I. Sinayskiy and F. Petruccione, Phys. Scr. T165, 014017 (2015)] to study the possibility of control of the external degrees of freedom of the "walker" (position) by manipulating the internal one, e.g. spin, polarization, occupation numbers. The connection between dynamics of the "walker" and thermodynamical parameters of the system is established.

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