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NITheCS COLLOQUIUM:

How to build highways in a cell

Prof Kristian Müller-Nedebock (Stellenbosch University)

Monday, 4 March 2024 | 16h00 – 17h00 SAST

Venue: Neelsie Cinema, Stellenbosch University, and online

--- Cheese and wine will be served at the venue ---

ABSTRACT

From the perspective of a physicist, living cells are fascinating non-equilibrium systems that contain many different structures. These are assembled and dissembled in the cell, can serve as the highways for transport, or form a basis for cell division, for example. We look at how statistical physics can add insights about the form and function of structures in cells. In particular, we show how one can understand some structural and elastic properties of the cytoskeleton and how molecular motors, in combination with cytoskeletal filaments, participate in biological processes.

BIOGRAPHY

Kristian Müller-Nedebock works in the Department of Physics at Stellenbosch University, where his research is in the field of soft condensed matter physics and the physics of biological systems at the length scale of cells.

Before joining Stellenbosch University, Kristian was a postdoctoral research associate at the Max Planck Institute for Polymer Research in Mainz, Germany, which was preceded by his doctoral work in the Cavendish Laboratory, University of Cambridge, UK.

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