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NITheCS MINI-SCHOOL:

Phase transitions and critical phenomena at surfaces and interfaces

Prof Joseph Indekeu (KU Leuven, Belgium)

Mon, 7 Aug	Tues, 8 Aug	Thurs, 10 Aug	Fri, 11 Aug
14h00 – 16h00	14h00 – 16h00	14h00 – 16h00	14h00 – 16h00
REGISTER: http://bit.ly/3OHI9xo		**REGISTER:** http://bit.ly/3s41TCk	

ABSTRACT

In four lectures, including problem solving sessions, the theory of phase transitions and critical phenomena at surfaces and interfaces is presented in a pedagogical 'find-out-now-together' and 'find-out-for-yourself' manner. Some basic knowledge of variational calculus, (statistical) mechanics and thermodynamics is assumed. The focus will be on understanding and modeling wetting transitions, which have intrigued scientists in the past 45 years, using statistical mechanics approaches.

Background material:

J.O. Indekeu, "Wetting phase transitions and critical phenomena in condensed matter", Lectures notes of "Fundamental Problems in Statistical Physics XII", *Physica A* 389, 4332 (2010). Click to download.

BIOGRAPHY

Joseph Indekeu is professor of theoretical physics at KU Leuven, Belgium. His expertise is in statistical physics and theoretical condensed matter physics. His research is mainly on statistical mechanics of phase transitions and critical phenomena at surfaces and interfaces. Most of his contributions are in the area of wetting phenomena. He is Editor-in-Chief of the journal *Physica A*. His teaching assignments are in general physics, quantum mechanics and statistical physics. He is now visiting Stellenbosch University (SU) for the fourth time and will be Stias Fellow in 2024. With Kristian Müller-Nedebock (SU), he studied analytic methods for solving nonlinear differential equations. He has an outreach gig that introduces quantum physics to a general audience. It is subtitled in 9 languages, including Afrikaans.

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