NITheCS

**National Institute for
Theoretical and Computational Sciences**

NITheCS MINI-SCHOOL:
Cerf theory and pseudo-isotopy

Filippos Sytilidis (Oxford University, UK)

6, 13, 20, 21, 27 & 28 September 2023 | 14h00 – 16h00 SAST
Attend online or in person at Stellenbosch Mathematics Division 1006

ABSTRACT

The classical pseudo-isotopy problem asks when a pseudo-isotopy (i.e. a generalised isotopy that is not required to be level-preserving) is isotopic to an isotopy. This problem has deep connections with many areas of topology, from the singularity theory of smooth mappings to algebraic K theory, as well as with gravitational lensing in astronomy. We will introduce the theory of Morse functions and their deformations (Morse-Cerf theory) and discuss how Cerf used it to address some cases of the pseudo-isotopy problem in his seminal work.

This mini-school will be of interest to topologists and mathematical physicists. Please register via both links above to attend all the lectures.

BIOGRAPHY

Filippos Sytilidis is a senior-year PhD student at the University of Oxford. He did his undergraduate degree in Mathematics at Harvard, graduating magna cum laude in 2020 with highest honours in his field, and where he was awarded the David Mumford Undergraduate Mathematics Prize in 2020.

REGISTER *(please register via both links to attend all the lectures):*

Wed, 6, 13, 20 & 27 September 2023	Thurs, 21 & 28 September 2023
REGISTER: http://bit.ly/47pPPvL	**REGISTER:** http://bit.ly/3qpprl1

science & innovation
Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

NRF National Research Foundation

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT