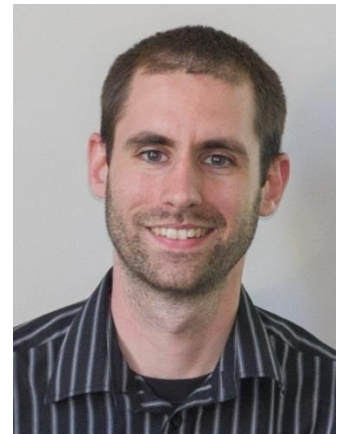# CoE-MaSS weekly seminar series

THE DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL AND STATISTICAL SCIENCES (CoE-MaSS) WOULD LIKE TO PRESENT A SEMINAR BY

Prof Stephan Wagner
(Stellenbosch University)

"Loop Models on a Fractal"

Friday, 11 August 2017
10:30 – 11:30

Broadcast live from:
Videoconferencing Facility, 1st Floor
Mathematical Sciences Building, Wits West Campus

How to connect to this seminar remotely:
You can connect remotely via Vidyo to this research seminar by clicking on this link:
http://wits-vc.tenet.ac.za/flex.html?roomdirect.html&key=y0SSOwFsvsidbzg4qFdWXvvQtyI
and downloading the Vidyo software before the seminar.
You must please join in the virtual venue (called *"CoE Seminar Room (Wits)"* on Vidyo)
strictly between **10h00-10h15**. No latecomers will be added.

Important videoconferencing netiquette:
Once the seminar commences, please mute your own microphone so that there is no feedback
from your side into the virtual room. During the Q&A slot you can then unmute your microphone
if you have a question to ask the speaker.

Title:
Loop models on a Fractal

Presenter:
Prof Stephan Wagner, Stellenbosch University
swagner@sun.ac.za

Abstract:
We consider two types of loop models on self-similar, fractal-like graphs, the Sierpiński gasket and its finite approximations being a classical example. In one model, a 2-factor (spanning subgraph whose components are cycles) is chosen uniformly at random. In the other, the edge set is partitioned into cycles, again uniformly at random. The presence of "holes" in the graph turns out to have interesting consequences. While the latter model mostly yields rather short cycles, long cycles surrounding the holes appear with high probability in random 2-factors, and those long loops feature interesting geometric properties reminiscent of random walks and their loop-erased variant. Moreover, an interesting phase transition can be observed.