

# CoE-MaSS weekly seminar series

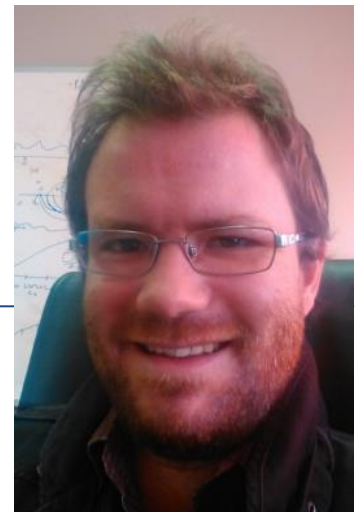
THE DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL AND  
STATISTICAL SCIENCES (CoE-MaSS) WOULD LIKE TO PRESENT  
A SEMINAR BY

## Dr Alfred Bogaers

*(Advanced Mathematical Modelling, Modelling and Digital  
Sciences, Council for Scientific and Industrial Research, Pretoria,  
South Africa)*

*“Efficient and robust partitioned solution schemes for fluid-  
structure interactions”*

Friday, 23 September 2016  
10h30-11h30



---

**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=y0SSOwFsvsidbzg4qFdWXvvQtyl>  
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:**

Efficient and robust partitioned solution schemes for fluid-structure interactions

**Presenter:**

Dr Alfred Bogaers, Advanced Mathematical Modelling, Modelling and Digital Sciences, Council for Scientific and Industrial Research, Pretoria, South Africa, [ABogaers@csir.co.za](mailto:ABogaers@csir.co.za)

**Abstract:**

In this work we aim to outline the recent development of a strongly coupled, partitioned fluid-structure interactions (FSI) solver. Well established methods are analysed and new methods proposed to provide robust, accurate and efficient FSI solutions. The methods introduced and analysed are primarily geared towards the solution of incompressible, transient FSI problems, which facilitate the use of black-box, sub-domain field solvers. The talk aims to address a number of issues, ranging from interface information transfer between non-matching, non-conforming discretization schemes, through to newly developed quasi-Newton methods to stabilise and improve coupling efficiencies.