

# 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 Wen-Xiu Ma

*(Department of Mathematics, University of South Florida, United  
States of America)*

*“Solution hierarchies  
and matrix loop algebras”*

Monday, 09 May 2016  
10h30-11h30



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**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:**

Solution hierarchies and matrix loop algebras.

**Presenter:**

Prof Wen-Xiu Ma, Department of Mathematics and Statistics, University of South Florida, United States of America; <http://math.usf.edu/faculty/wxiума/>

**Abstract:**

We will talk about a zero curvature formulation of soliton hierarchies associated with matrix spectral problems. The trace identity or the variational identity over matrix loop algebras will be used to explore Hamiltonian structures leading to Liouville integrability. Illustrative examples are based on the two three dimensional Lie algebras,  $sl(2, \mathbb{R})$  and  $so(3, \mathbb{R})$ .