MaSS
DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL & STATISTICAL SCIENCES

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

Florian Luca

(School of Mathematics, Wits University)

"Diophantine m-tuples"

Friday, 12 February 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=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:
Diophantine *m*-tuples

Presenter:
Florian Luca, School Mathematics, University of the Witwatersrand, Johannesburg, South Africa; Florian.Luca@wits.ac.za

Abstract:
A diophantine m-tuple is a set of *m*-positive integers $\{a_1 \ldots\ldots\ldots, a_m\}$ such that the product of any two of them plus 1 is a square. For example, {1,3,8,120} is a Diophantine quadruple found by Fermat. It is known that there are infinitely many such examples with $m = 4$ and none with $m = 6$. No example is known with $m = 5$ but if there exist, then there are only finitely many such. In my talk, I will survey what is known about this problem, as well as its variations, where one replaces the ring of integers by the ring of integers in some finite extension of **Q**, or by the field of rational numbers, or one looks at a variant of this problem in the ring of polynomials with coefficients in a field of characteristic zero, or when one replaces the squares by perfect powers of a larger exponent, or by members of some other interesting sequence like the sequence of Fibonacci numbers and so on.