Littoral-Kent Seminar, May 2015

Date

Monday, May 18th

Location

School of Mathematics, Statistics & Actuarial Science
Cornwallis Building
University of Kent
Canterbury

Programme

Time		Location
10.30-11.30	**Dominique Schneider** (Université Lille Nord de France ULCO, Calais): *First Digit Phenomenon: the Benford law*	Maths-LT
11.30-12.30	**Peter Hydon** (University of Kent): *Conservation laws: from differential to difference*	Maths-LT
12.30-2.00	**Buffet lunch**	McVittie Library
2.00-3.00	**Shalom Eliahou** (Université Lille Nord de France ULCO, Calais): *On numerical semigroups and Wilf's conjecture*	Maths-LT
3.00-4.00	**Rowena Paget** (University of Kent): *Symmetric group representations and the plethysm problem*	Maths-LT
4.00	**Tea & Coffee**	McVittie Library

Abstracts

Peter Hydon, *Conservation laws: from differential to difference.*

Noether's (First) Theorem uses symmetries of a variational problem to generate conservation laws of the corresponding Euler-Lagrange equations. It is less well-known that one can construct conservation laws directly, for a given system of PDEs in Kovalevskaya form, whether or not the system arises from a variational problem. In this talk, I describe how both of these approaches can be used (with appropriate modifications) to find conservation laws of partial difference equations. I also discuss a difference analogue of Noethers Second Theorem, together with a new intermediate result that links Noethers First and Second Theorems. These results open up some new ways to obtain finite difference approximations that preserve particular conservation laws and generalized Bianchi identities.