
Contributed Papers
Communications libres
(Org: **Trevor Jones** (UNB))

GARY BAZDELL, Carleton University, 1125 Colonel By Drive, Ottawa, ON K1S 5B6

Projection—Product and Asymptotic Constructions of Mixed Level Covering Arrays

When the parameters k and v_i of a strength 2 mixed level covering arrays (MCA) are unknown ahead of time, the best single approach for constructing an MCA is to use a combination of the product construction and projection construction on orthogonal arrays from finite fields. The product construction and projection construction can very naturally be combined and we show that it is preferable to perform the product construction after the projection construction when the number of disjoint rows are 1 or v and conjecture that this is always the preferred option.

TREVOR JONES, University of New Brunswick

Heat Kernel for Open Manifolds

It is known that for open manifolds with bounded geometry, the differential form heat kernel exists and is unique. Furthermore, it has been shown that the components of the differential form heat kernel are related via the exterior derivative and the coderivative. We will give a proof of this condition for complete manifolds with Ricci curvature bounded below, and then use it to give an integral representation of the heat kernel of degree k .

FRANKLIN MENDIVIL, Acadia University, Wolfville, Nova Scotia

Random Iteration of Functions

The dynamics of the iteration of some function is a classical area of study within dynamical systems, iteration of complex polynomials being a particularly striking example. It is no surprise then that adding randomness is a natural thing to do, particularly since many Markov chains can be viewed a random iteration of functions.

In this talk we give a brief background on general results in the area of convergence theorems for random iteration of functions, with particular attention to the case of families of random contractions. After this we concentrate on some results on a simple model of time inhomogeneous random iteration. As is the case for Markov chains, allowing the dynamics to vary with time presents new complications.

BEN SEAMONE, Carleton University, Ottawa, ON

Spanning Trees of Complete Cayley Graphs

If G be a finite group of order n , we denote by K_G the complete Cayley graph on G . Let L be a multiset of group elements from G . If K_G contains a subgraph whose edge labels are precisely L then we say that L is realizable as a G -subgraph. For an arbitrary finite group G , we present necessary and sufficient conditions for a multiset L to be realizable as a G -spanning tree. This work is motivated by a conjecture by Buratti that any list of $p - 1$ elements from \mathbb{Z}_p is realizable as a \mathbb{Z}_p -path.