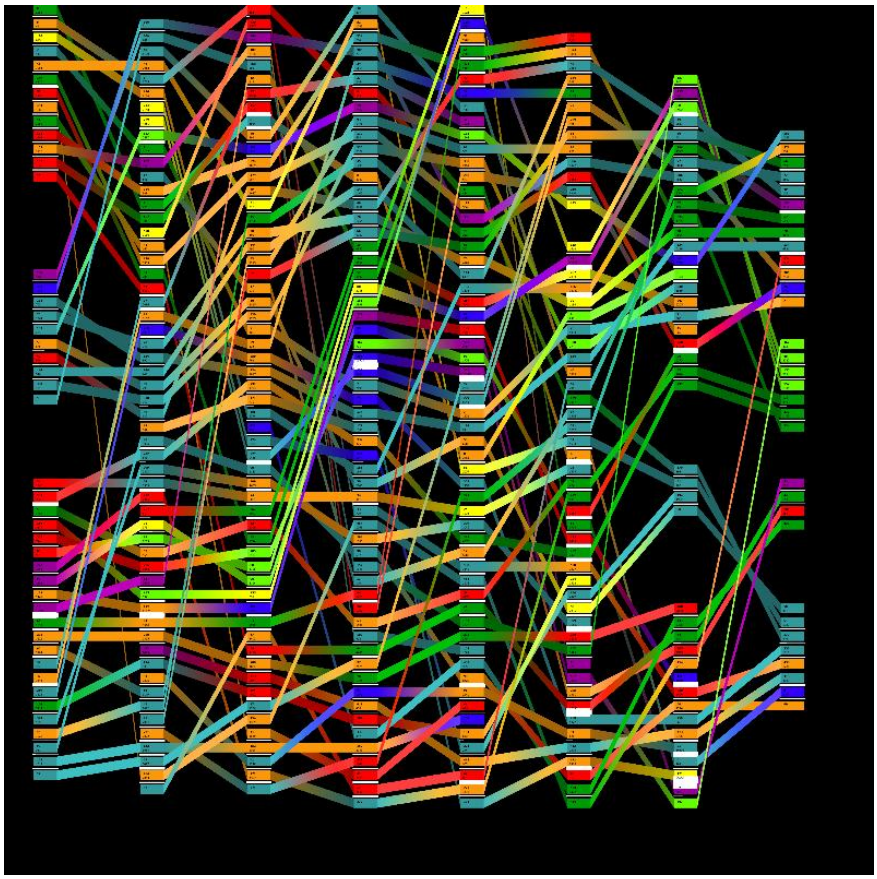
Making sense of the tracks of dolphins or other moving objects

Dr. Tony Moore and Dr. Judy Rodda
School of Surveying



Abstract: Through GPS and tracking technologies, there now exists an abundance of space-time trajectory data, and this resource is exponentially increasing in size. The lion's share of this dataset comes from humans and mobile devices such as smartphones, but a significant mass of data relates to animal movement, collected through portable devices attached to the animal. The problem to be addressed is this: Taking into account a dataset relating to even a single animal, conventional mapping techniques would render all but the simplest dataset as an uninterpretable 'scribble'. To address this, an adaption of the REMO method (which transforms a set of space-time trajectories into a grid of directions travelled, or velocities, with listed trajectories discretised into regular time intervals) will be outlined. The modified version, Adaptive Relative Motion (ARM), reorders trajectory lines according to proximity through simulated annealing, an optimizing method. Featured space-time data will be that of a set of Hector's dolphins off the coast of southern New Zealand.

12:00 noon, Thursday, 3 March 2016
L1 Lecture Theatre
School of Surveying
310 Castle Street

School of Surveying
Te Kura Kairūri

University of Otago
Te Whare Wānanga o Otāgo
New Zealand