

ATELIER NSDC « ANALYSE DE DONNÉES DIRECTIONNELLES AVEC APPLICATIONS EN BIOMÉCANIQUE
ET EN IMAGERIE MÉDICALE »

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**NICDS WORKSHOP “THE ANALYSIS OF DIRECTIONAL DATA WITH APPLICATIONS TO
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Embeddings, Earthquakes and Orthogonal Axial Frames

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The data considered in directional statistics are typically observations on directions, axes, or rotations. An important approach to the analysis of directional data is that of embedding the sample space in a Euclidean space. This will be reviewed briefly. Orthogonal axial frames are (ordered) sets of orthogonal axes. They arise as (i) key geometrical elements (known in seismology as “focal mechanisms”) of earthquakes, (ii) principal axes of certain physical tensors (e.g., stress tensors), (iii) principal axes of variance matrices or correlation matrices. Some tools (based on suitable embeddings) for the analysis of data that are orthogonal axial frames will be presented.

This is joint work with Richard Arnold of the Victoria University of Wellington, New Zealand.