Geophysical Research Abstracts, Vol. 7, 02496, 2005
SRef-ID: 1607-7962/gra/EGU05-A-02496


# Application of 3-D Empirical travel times to location of teleseisms in papua New Guinea

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The Empirical Travel Time (ETT) technique of Nicholson et al. (2004) uses a large arrival time database to characterise the 3-D heterogeneity of the Earth as seen by a given seismic station. A unique feature of the resulting 3-D travel time map is that it contains all of the spatially coherent signal in the original dataset (used in its construction), and none of the spatially uncorrelated noise. In the context of earthquake location 3-D empirical travel times can be used in place of a 3-D earth model to directly incorporate the effects of laterally heterogeneity.

Here we locate a sequence of aftershocks in eastern Papua New Guinea using the ETT and teleseismic data. In this presentation we will compare the ETT estimated locations with published bulletin values as well as those relocated by Tregoning et al (2005) using the Arrival Pattern method (Nicholson et al., 2002) and will evaluate the effectiveness of the ETT as a means of providing insight into tectonic structures in remote regions.