

**Abstract: New Zealand Hydrological Society
Conference 2004, Queenstown 16-19 November 2004**

**Precipitation estimation in the Lake Pukaki
catchment, New Zealand**

Tim Kerr*

Ian Owens

Department of Geography

University of Canterbury

Private Bag 4800

Christchurch 8020

With assistance from:

Meridian Energy Ltd

The Tertiary Education Commission

Few precipitation measurements have been taken in the mountain regions of the nationally important Lake Pukaki catchment. This requires the magnitude and distribution of precipitation to be estimated for the region. A variety of annual average and daily precipitation distribution systems have been proposed in the past. Two issues have arisen from review of these. First, those systems that relate precipitation magnitude to elevation produce anomalous results as the spatial resolution is refined. Second, comparison of the various systems with snow pack measurements, with water balance calculations and with precipitation data from the Rakaia catchment indicate a general over estimation of precipitation volume. Consequently, a precipitation distribution related to distance from a western baseline following a similar trend to that observed in the Rakaia catchment, and tuned to lake inflow and snow pack depth data is proposed.