representativeness of surface measurements to the layer where precipitation was forming, and the quality of individual observations. Weighing these various factors and determining a single estimate of storm dewpoint temperature was very subjective. Given that all other sources of inaccuracy had been minimized, no more accuracy than around 2°C could be achieved.

5.5.3 Generalizing the storm database

The task of generalizing the storm database was primarily one of identifying and removing the site-specific components of each storm so that the storm could be transposed to other locations.

5.5.3.1 Regions, zones and homogeneity

The region of GSAM applicability is south-eastern Australia and the boundary extended to cover that part of Australia outside the region of applicability of the method of Kennedy and Hart (1984). The geographical boundary between the two methods follows the boundaries of certain drainage basins.

The GSAM region was subsequently divided into two zones, coastal and inland. This division reflects a working hypothesis that within the two zones the mechanisms by which large rainfalls are produced are genuinely different. The corollary is that within each zone there is an assumed homogeneity: storms in the zonal database can occur anywhere within the zone.

With the introduction of the GTSMR (Walland and others, 2003) the geographical boundary between the two methods was maintained but the GTSMR region was divided into new zones: coastal, inland and a winter-only zone in the south-west corner of the continent. As for the GSAM, the GTSMR zones are based on an examination of the geographical extent of various storm-producing mechanisms. In practice, this meant a coastal zone where any mechanism operating in the tropics may be the principal influence and an inland zone where only monsoonal lows would be expected to produce extreme rainfall.

The boundaries between the methods and zones are shown in Figure 5.71.

5.5.3.2 Depth–area–duration analysis

The size, shape and orientation of the analysed isohyets of a storm are influenced by a number of site-specific features: topographic influences, moisture inflow direction, and storm movement. Quantifying each storm in terms of a set of DAD curves, as outlined in section 5.5.2.5, effectively removes the specifics of the spatial distribution of each storm.

5.5.3.3 Topographic enhancement of rainfall

The most original feature of the generalized methods is the application of a technique loosely based on concepts and practices expressed in various United States Hydrometeorological Reports (United

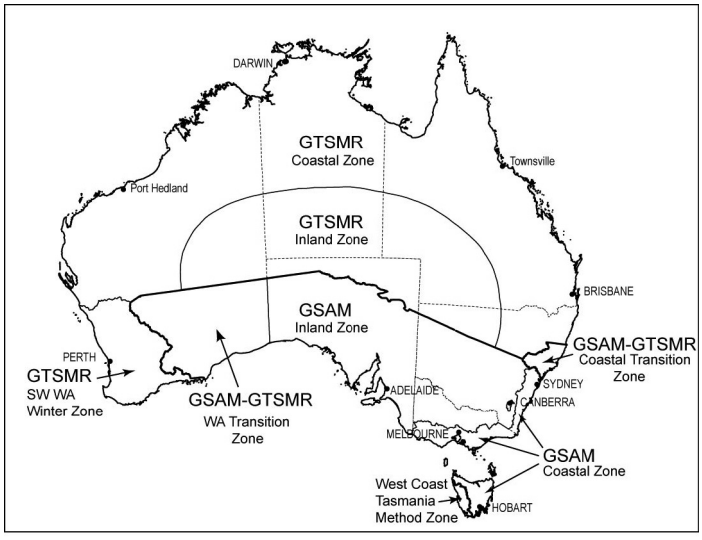

Figure 5.71. Boundaries between PMP methods and zones – GTSMR