

basin was established using data from 24-hour typhoon storms in non-orographic regions in the Hainan Island region and those that were transposed, as well as DAD relations of PMP for non-orographic regions on Hainan Island. The precipitation depth of the DAD curve for an area equal to the watershed area was the same as the PMP for non-orographic regions on Hainan Island. The average precipitation depth for areas larger or smaller than the watershed area was smaller than PMP for the same areas in non-orographic regions on Hainan Island. The DAD curve was called the DAD curve of 24-hour PMP for designs for non-orographic regions in the Changhuajiang River basin.

6.2.5.4.2 *Spatial distribution of 24-hour PMP for non-orographic regions in the Changhuajiang River basin*

According to an analysis of observed typhoon storms in the Changhuajiang River basin, the isohyetal map was nearly elliptical. Calculations of ratios between major and minor axes showed that the storm isohyets tended to change from ellipses to circles with increasing area size. After establishing the average isohyetal distribution of the typhoon storms, the PMP isohyetal model for the typhoon storms was designed using the DAD curve of 24-hour PMP for designs for non-orographic regions in the Changhuajiang River basin, as is shown in Figure 6.26. When estimating

PMP for the watershed, the direction of the major axis was 225° and the centre was the watershed centre according to the direction of moisture inflow.

6.2.5.4.3 *Adjustment of typhoon intensity*

After landing, typhoons get weaker as they move inland. The 50-year persisting maximum 12-hour dewpoint temperature was selected as an index for the adjustment. The dewpoint isoline maps formed closed rings along the coastline of Hainan Island, descending from the coastline to the centre of the island. The largest decrease was 9 per cent.

6.2.5.4.4 *Comprehensive adjustment coefficient*

The adjustment coefficient for the distance to the coast and the time-interval orographic enhancement factor were merged into the comprehensive adjustment coefficient. Table 6.12 lists comprehensive adjustment coefficients for 24-hour storms in the Changhuajiang River basin.

6.2.5.4.5 *PMP estimation*

Figure 6.25 was placed at the watershed centre of Daguangba, and the 24-hour $PMP_{0\Delta t}(x, y)$ for non-orographic regions on the grid points were calculated using linear interpolation. $PMP_{\Delta t}(x, y)$ on the grid points could be determined using Table 6.12 and Equation (6.2). The isoline map of 24-hour

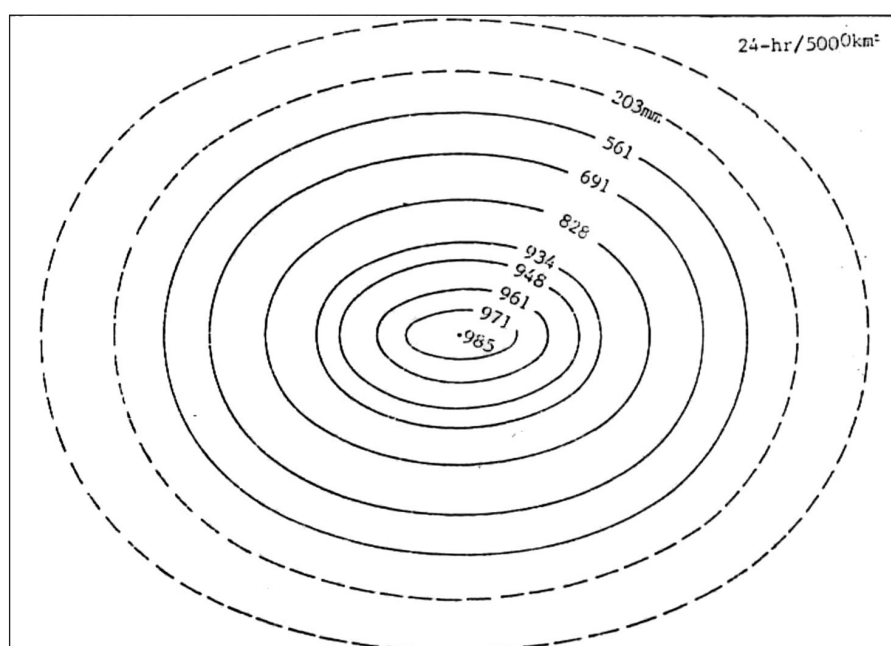


Figure 6.26. Isohyetal map of 24-hour 5 000 km² PMP for non-orographic regions on the Changhuajiang River Basin (Lin, 1988)