

## **Prospect for TRMM in rainfall estimates: a case study in the Laohahe basin, China**

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**Abstract** Four years (2002–2005) of data from the Tropical Rainfall Measuring Mission (TRMM) 3B43 (V6) and 52 monthly raingauge measurements over the Laohahe basin in northeastern China were compared. The distribution of rainfall estimated from TRMM and raingauges showed the same spatial trend: a strong north–south gradient in rainfall. The time sequence patterns of the rainfall determined by both processes were remarkably similar (the correlation coefficient is 0.99). Analysis of rain climatology in different seasons and at 52 stations showed that the calculation period and site are important factors in estimating rainfall from TRMM. In the rainy season, the degree of accuracy of the TRMM estimate is more than 46%, while in the dry season, it is only about 12%. At the annual scale, only 23.1% of station data were accurately estimated, 0.2% underestimated and 75% overestimated. Therefore, in the Laohahe basin, TRMM is useful for estimating the average values of rainfall and good for long-term climatology with application to strategic water resource management.

**Key words** rainfall; TRMM 3B43; raingauges; Laohahe basin, China