

# Appendix

## Preparation of one-to-one data sets

A common grid structure in space is chosen to prepare TRMM 3B42 and IMD gridded data for inter-comparisons in rainfall climatology. Preparation of the two data sets on the common grid structure chosen is described here, and hence the preparation of One-to-one data sets. Figure 1 describes IMD grid points at  $0.25^\circ \times 0.25^\circ$  resolution as they are distributed in the original data. Figure 2(a) describes the placing of IMD (Red) and TRMM (Green) grid locations shown together for a typical region, North-Eastern Indian region, at  $0.25^\circ \times 0.25^\circ$  spatial resolution as they are distributed in the respective original data sets. Similarly, Figure 2(b), Describes the placing of IMD and TRMM grid locations shown together for the peninsular Indian region.

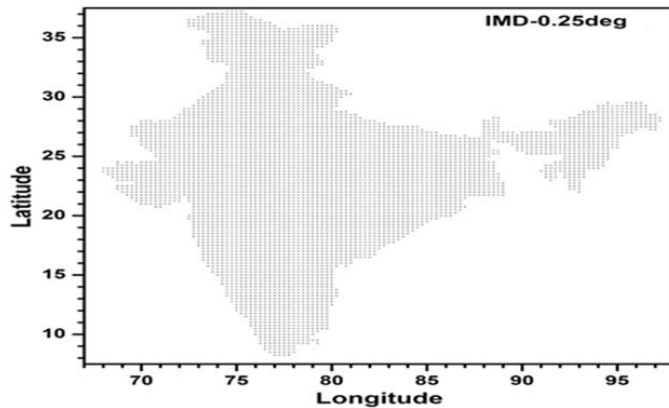


Figure 1. IMD Grid structure at  $0.25^\circ \times 0.25^\circ$  resolution as they are distributed in the IMD Gridded data.

As shown in Figures 2a and 2b, TRMM grid points are not overlapping on IMD grid points. So, it was necessary to construct One-to-one time series of IMD and TRMM daily rainfall in space for inter-comparisons on various spatial and time scales. Various steps are followed to create One-to-one TRMM and IMD data sets. They are described here.

In Step-1, TRMM grid points are sorted out within the IMD data boundary and are considered for further analysis. In Step-2, for each data point on TRMM grid, diagonally opposite data point on the IMD grid is considered as corresponding data point for preparing one-to-one time series. The end points are automatically taken care as TRMM grid points precede IMD end points location wise.

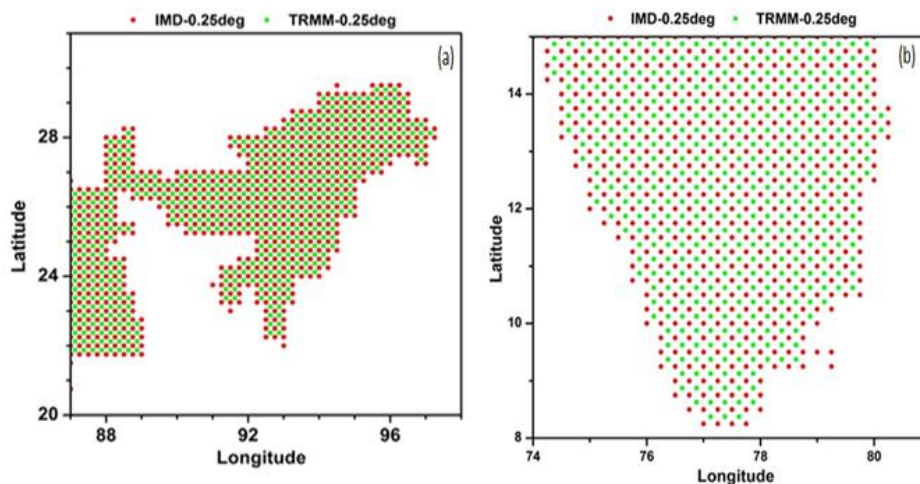


Figure 2. Placing of IMD (Red) and TRMM (Green) grid points together for a typical a) North-Eastern Indian region (top panel), b) the peninsular Indian region (bottom panel) at  $0.25^\circ \times 0.25^\circ$  spatial resolution as they are distributed in the respective data sets.