



## **Simulation of Global Precipitation Measurement Microwave Imager level 1 and 2 data**

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The Community Radiative Transfer Model (CRTM), along with brightness temperature (Tb) and precipitation data derived from exiting satellite microwave radiometers such as TMI, AMSRE and AMSUB were used to simulate the synthetic GMI level 1 and 2 data products. A global 1/8 degree resolution database were established by matching-up low-frequency (10-89 GHz) and high-frequency (89-183 GHz) Tb and precipitation measurements. The CRTM was then used to convert existing channel Tb into synthetic GPM Microwave Imager (GMI) Tb for each GMI channel. The synthetic precipitation data include rainfall derived from low-frequency radiometer for lower latitude and rain and snow derived from high frequency radiometer for higher latitude. A geolocation model were used to derive GMI Level 1 and level 2 orbit data. These orbits were filled with synthetic GMI Tb and precipitation. Global and regional precipitation features were analyzed using the synthetic GMI data.