

## Evaluation of GPM Rainfall Estimation Quality

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Rainfall is a critical weather parameter, where many applications rely on it such as agriculture, hydrology, climatology, and different human activities. In many regions, the number of rainfall stations is not enough to represent the rainfall distribution in these regions, in addition, installation and maintenance of rain gauges network may be difficult due to different reasons. The rainfall estimation using Remote Sensing (RS) applications can be a good source of data especially in regions which face many problems in rainfall monitoring stations. There are many studies that are concerned with using rainfall estimation products. These rainfall estimation products are available for the globe and can be used easily from the internet. In this contribution, the Global Precipitation Measurement (GPM) will be evaluated over Sinai and North Coast.

The (GPM) is an international network of satellites that provides the next generation global observations of rain and snow building upon the success of TRMM. GPM data provide a great coverage between 65° north latitude and 65° south latitude with spatial resolution 0.1 degree and temporal resolution 1 hour. The GPM was released on the internet since September 2nd, 2014 offering the precipitation data in hourly and daily format since March 1st, 2000.

In this research, the rainfall estimation product (GPM) will be evaluated using the rain gauge data in the case study area (Sinai and North Coast) using statistical criteria (Root Mean Square Error (RMSE), Mean Absolute Error (MAE), Bias, and Nash Sutcliff (R2)). The results will focus on the reliability and agreement of these data with the actual measured gauge data.