Comparison between Iraqi Gauges and TRMM Rainfall Data Over Middle Euphrates Region During Period from 1998 to 2017

Abstract- The aim of this paper is evaluated and compares between Iraqi gauges in the Middle Euphrates region and TRMM rainfall data during the period from 1998 to 2017. Middle Euphrates Region, whose Area is 26611 km2 was selected as a study area. Two sets of Iraqi data gauges and Tropical Rainfall Measuring Mission (TRMM) average monthly rainfall data were used for analysis. Rainfall data were acquired from two sources, Iraqi Meteorological Organization and Seismology (IMOAS) and Giovanni website to download TRMM v7 0.25-degree data. Data collected from five stations in the study area and these stations are; Dewaniya, Hilla, Karbala, Najaf, and Semawa. Statistical analysis indices such as bias, root mean square error (RMSE), and R-Square were used to comparison between data. Monthly and seasonally comparison approaches have been used to understand the relationships, trends and error propagations between two data sets for five gauges’ station. The final results of monthly comparison approach were illustrated that some of the months have good agreements for each to other and other months have medium and weak agreements between two data sets in all five stations which mentioned above. Also, the results of seasonally comparison approach were illustrated that some of the seasons have good agreements for each to other and other seasons have medium and weak agreements between two data sets in all five stations which mentioned above. There are high values of Bias and RMSE between some months and some seasons of two data sets in all stations; this meaning there are high shifting between them.

Keywords- Bias, Iraqi gauges, Middle Euphrates Region, Rainfall, and TRMM.