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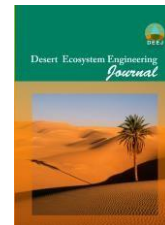
# Evaluate the efficiency of different convective parameterization methods for estimating seasonal and annual precipitation in North East of Iran in climate model (RegCM)

Somaye Mashari Eshghabad[1]*, Iman Babaeian[2], Ahmad Nohegar[3], Cyrus Ershadi[4]

**Abstract**

Convection as a short-term and long-term atmospheric processes that affect the climate and weather system, has been much studied. In this study, different types of parameterizing convection in precipitation field will be assessed in fourth version of the dynamic model of regional climate (RegCM4). The simulations are conducted for 2004 with 60*60 km grid spacing in mother domain, then the North East region of Iran was nested in mother domain with 20*20 km grid spacing. RegCM4 was run four times, keeping all the components of the model and the initial and boundary conditions the same, by each time coupling one the convection schemes (Kou, Grell Arakawa-Schubert, Grell Fritch-Chappell, Emanuel) with the model, then the results were nested. After running the model, results were compared with Aphrodite precipitation data and the statistical criteria, including Root Mean Square Error, Bias, Correlation, Mean Absolut Error and Differences in annual and seasonal observed and simulated precipitation were calculated. According to statistical criteria, the best scheme for this area is Grell Arakawa-Schubert scheme.

1. Ph.D. student, Hormozgan University. Corresponding author (mashari1363@gmail.com)
2. Assistant Professor, I.R.OF IRAN Meteorological Organization, Climatological Research Institute-Mashhad
3. Professor, Tehran University
4. Assistant Professor, Hormozgan University