# Simulation of Forecasting Assessment for Iran Climate Change Using MAGICC-SCENGEN Method

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*Abstract*— **In this paper, we modeled the climate of Iran for future periods. Each period is a 30 years period centered on a year. The range of periods is from 2000 (i.e. 1986 - 2015) to 2100 (i.e. 2086 -2115). This was made using 2 general circulation models (ECHAMA4 and HadCM2) and 18 IPCC scenarios. MAGICC – SCENGEN was used as atool for downscaling GCM low resolution output data. Result of HadCM2 model shows a %2.5 decreases in precipitation until 21000 but ECHAM4 shows a %19.8 increase for this period. Another difference between results of these 2 models is that HadCM2 predicts an increase in precipitation in next decades for Mazandaran, Golestan, Khorasan Shomali, Khorasan Razavi, Semnan, Tehran and some parts of Gilan and Ghazvin provinces, while ECHAM4 predicts a decrease for that regions. HadCM2 predicts precipitation bdecrease for southeast of country (Hormozgan, Kerman, Bushehr. south of Fars and some parts of Sistan-Baloochestan but in ECHAM4 that regions will have precipitation increase in similar period. About temperature, both HadCM2 and ECHAM4 agree in temperature increase in next decades for all provinces. These 2 models predict, on the average, 3 to 3.6 $^0$C increases in temperature until decade 2100. Maximum increase in decadal temperature in ECHAM4 is about 1 $^0$c more than HadCM2 and both of them are in conformity with each other is in spatial distribution of decadal temperature.**

Keywords-: *Magic scenes, general circulation model, hadCM2, ECHAMA, climate change.*

## I. INTRODUCTION

Predictions and assessments have some problems like the amount of propagation of gases and other do pant in next decades and also big scales of places and time separation of general circulation patterns of an atmosphere [1-2]. All of these parameter face with? And also there is another problem which relates to design of coefficient patterns is make unique of all feed backs which are available in a system of atmosphere- ocean- biosphere- society. Some of these feedbacks are organized in advanced patterns for general circulation model (GCM). One of the problems is was we make paten; we know that this work need some similar works for separating of human offends from natural oscillation. Continental patterns need a lat of time for assessment and test and performance and it may last months and years for design and performance and recognize proper collection of experiments. They need high capacity for calculating and also we can say that those patterns are proper selection for this purpose of course if:

a) We can describe a complex behave our of patterns.
b) We discover some? Continental predictions.
c) These patterns use in many places.

Some of these CSG develop and use in recent years.
For making similarity the statue of continental variables, we need to introduce green house gases in next periods so all of the scenario are available in the globe and those are choose by Beinol dol group for changing the Ipcc continent. The first scenarios for propagation of Ipcc are choose in 1992 they are the first world scenarios for assessment the changes of green house gases, they include 6 scenarios (IS92a ➡ IS92f).
Assessments are done from the change an average temperature of the globe and sea (18, 9). We exposure the general structure of MAGICC- SCENGEN pattern.
There are world continental data's in the MAGICC-SCENGEN pattern which has the power separation 5 of geographical length and latitude for 3 continental variable which they are an average temperature and the amount of raining and the coverage of cloud but there are observable continental data's with the separation power of 0.5 geographical degree for 4 big areas (ursupe-southern Asia-America- southern Africa).
And also the amount of raining and the coverage of cloud can pattern the minimum temperature, the maximum temperature, steam pressure, the speed of wind, and the amount of changes of temperature.