Geophysical Research Abstracts,
Vol. 10, EGU2008-A-05855, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-05855
EGU General Assembly 2008

Numerical tracking of Middle Eastern cyclones in the cold period of the year

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This paper deals with the numerical tracking of Middle Eastern cyclones. Cyclogenesis regions and their movement tracks can be determined by respective algorithms. In this paper, re-analyzed NCEP data with the temporal resolution of 24 hours and the spatial resolution of 2.5×2.5 degrees were used for the cold period (December, January, February, and March), of the years 1993-94 to 2002-03. The area under study was in the latitude $10^{\circ}N\mathrm{tg}5^{\circ}N$and the longitude $0^{\circ}E\mathrm{t}65^{\circ}E$, which includes the Middle East. An algorithm written in $C\mathrm{rg}+\mathrm{g}$anguage was used for locating the points, and *ArcGIS* software was utilized for drawing the tracks. The results are as follows: Five main tracks were characterized; the most important tracks originate from western and northwestern areas; each month exhibits its own particular climatology; in January, the tracks tend to extend along the northern Mediterranean area; in March, the Atlantic low pressures increase noticeably; most of the tracks have two- or three- day lifetimes; the effect of topography factor on the formation of cyclogenesis regions is more outstanding than that on leading the tracks; cyclones enter Iran along three main tracks and three sub-tracks; the most important track is the one that enter Iran from the west, originating from Cyprus region; the frequency of occurrence of cyclones exhibits an ascending trend in future.