

The Changes in the Summer Season Length at the Levant Coast

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The summer season in the Middle East is well defined synoptically and weather-wise, especially in the Mediterranean climate region. The Persian Trough dominates from June to September, accompanied by the Mediterranean High (a branch of the Azure Anticyclone) aloft. Rainfall amounts in June-August in Israel are nil, and weather fluctuations are minute. The stable air is caused by the thick upper inversion (basis below 1000 m ASL) which persists during 80% of the summer days. Due to the clear and unique definition of the summer season, it is relatively easy to define its period and to assess the inter-annual changes in its length. We examined ten weather and synoptical parameters and selected two parameters: The elevation of the tropopause (above 16,000 gpm for at least 10 consecutive days) at Bet-Dagan, Israel and the commencement and termination of the Persian Trough situation on the synoptic charts. These commencement and termination dates for both parameters, the length of the summer season as well as a combination of both, were collected for 25 years (1980-2004) and were subject to regression analysis and two trend tests (Mann-Kendall and Spearman rank statistics). The results reveal a very high significant trend in all the nine data sets, where the summer starts earlier and terminates later and the number of summer days increases over the years.