



Seasonal variations of Shamal wind in the Arabian Gulf

Ali Saif Ali Saleh Almhrezi (1), Georgy Shapiro (1), Richard Thain (1), and Duncan Priestley (2)

(1) University of Plymouth, School of Marine Science and Engineering, Plymouth, Devon, United Kingdom
(gshapiro@plymouth.ac.uk, 0044 (0)1752 586103), (2) Higher Colleges of Technology, PO Box 25035, Abu Dhabi, UAE

The purpose of this paper is to present the results of a study into seasonal Shamal wind variations in the southern Arabian Gulf. The literature on the subject is reviewed; and the site of the study is discussed from the aspects of weather and wind cycles. Collected wind data, over a thirty year period (1981 to 2010), from Bahrain, Abu Dhabi, Sharjah and NCEP is analyzed and clearly indicates that the Shamal wind is a major feature within the region. Furthermore, over this thirty year period, analysis and observations show that there has been a reduction in Shamal wind force. Due to a number of factors, but primarily its location, wind data from Bahrain is a key element of this study analysis in order to show variations in Shamal wind strength over the southern of the Arabian Gulf. The synoptic conditions which help to understand the wind cycles are analyzed in order to establish a fundamental level of environmental information. A key finding is that the winter Shamal wind in the lower atmosphere is clearly associated with an upper air trough; therefore, the location of the Middle East jet stream has an effect on Shamal wind duration. Furthermore, this finding would suggest that the Arctic oscillation has an indirect effect on the Shamal wind. Additionally, the location and strength of the surface Azores High system has an influence on the Arabian Peninsula High which subsequently affects Shamal wind strength.