SEMINAR

DEPARTMENT OF PHYSICS

SPEAKER : **Dr. Hussain Al Sarraf**
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TITLE : **Projected climate change over Kuwait simulated using WRF high resolution regional climate model**

DATE : **Monday, November 21, 2022**

TIME : **12:30 P.M.**

PLACE : **Conference Room – Physics Dept.**

Abstract

This study evaluates three different landsurface models in case of the weather forecast research (WRF) model to predict the maximum temperatures during summer. The thermal diffusion of the five layers (5L), rapid update cycle (RUC), and Noah were selected based on the environment topography. TheWRF simulations over the Arabian Peninsula and Kuwait were conducted during the summer from May to September for a decade (2000–2010) to evaluate the sensitivity of the WRF model with respect to dynamic downscaling from the community climate system model (CCSM 4) in three nested-grid resolutions. The land surface model in WRF considerably affects the temperature simulations over the desert region. The observation and simulation were observed to exhibit optimal agreement when the WRF simulations with Noah land surface were used for predictions. The future predictions for May to September (2050–2060) predicted an increase of 1–2°C during summer over the Arabian Peninsula and Kuwait. The results reveal that the more effective 4-km high-resolution WRF domain obtained using the Noah land surface model should be considered for weather and climate predictions over the Arabian Peninsula and Kuwait.

All are cordially invited