Changing climate and extreme rainfall statistics in the Middle East

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Extreme weather events include intense rainfall, unseasonal rainfall, and protracted dry spells. For Israelis and Palestinians, extreme climate events can lead to large fluctuations in water availability with significant socio-economic and political planning impacts. Particularly vulnerable to these fluctuations is the Palestinian agriculture sector, which is currently 95

We look at the frequency and intensity of extreme rainfall events under two different climate change scenarios for the years 2071-2100. The climate scenarios used are those generated by the RegCM model developed at the Earth System Physics branch of the International Centre for Theoretical Physics (ICTP). The first scenario (A2) is the "business as usual" scenario, assuming continued increase in emissions. The second scenario (B2) is the "Kyoto" scenario, assuming reduced emissions of green house gases. Using a non-homogeneous hidden Markov model, we have spatially downscaled the RegCM results to the local level and have generated simulations in the daily domain. For each scenario, we present seasonal and inter-annual statistics including 7-day dry spells, maximum dry spell, seasonal average, multi-year average and number of wet days (days with precipitation above a specified threshold) and dry days.