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## **Global warming caused changes in precipitation in the Fertile Crescent and its association with the Zagros Mountain barrier jet.**

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Regional climate model runs were performed over the Middle East for both present day and future climate conditions under the IPCC SRES A2 emissions scenario. Precipitation events in the Fertile Crescent were placed into six classes using the ISO-DATA clustering algorithm based on water vapor fluxes into the region. Two of these classes are characterized by a strong southerly flux caused by the formation of a barrier jet on the Western slopes of the Zagros Mountains. These event classes produce the largest precipitation events, such that while only 8.5% of events fall into these classes, they account for 19.3% of precipitation early in the 21st century. By the end of the 21st century these barrier jet associated events are both larger and more numerous, representing 26% of events and over 50% of the total precipitation.