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Where does deserts´atmospheric moisture come from?

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Deserts are arid regions, generally receiving less than ten inches of precipitation a year, or regions where the potential evaporation rate is twice as great as the precipitation. Desert lands cover incredible distances. The great Sahara Desert covers almost 3.5 million square miles, the Australian deserts 1.3 million square miles, the Arabian deserts 1 million square miles, while the deserts of Turkestan have 750,000 square miles. Numerous smaller deserts are also scattered across the globe. In general terms the world's deserts could be divided into three categories. (1) "Rain Shadow" Deserts occur when the moist air that comes over a continent and hits a mountain is forced up the range. It cools, condenses and often falls as rain. As this air pushes over the top of the mountain and down the other side it can again expand, although it has now lost much of its moisture. If this effect is strong enough the area behind a mountain could be a desert. All the deserts of North America are examples of this kind of deserts. (2) "Coastal Deserts" are found on the western edge of continents near the tropics. Along the western edge of continents in both hemispheres the oceans are quite cold due to ocean currents As evaporation is a function of heat, cold oceans do not provide the moisture that warm oceans do. Furthermore there are high pressure systems in the area, tending to block incoming storms. The Atacama Desert of South America is an example of this kind of deserts. (3) "Remote Interior Basins" deserts occurs because these areas lie so far from any sources of moisture, that by the time any potential storm system reaches them it has already lost its moisture. The Sahara Desert or Gobi deserts of Asia are examples of this kind of deserts. In this work we analyzed the main sources of moisture over the principal World´s deserts using a Lagrangian method (STOHL and JAMES, 2004, 2005). The method computes budgets of evaporation minus precipitation (E-P) by calculating changes in the specific humidity along back-trajectories. The trajectories were calculated for the previous 10 days, which is

the average time that water vapour resides in the atmosphere. We tracked the origin of all air-masses, including precipitating airmasses, residing over the deserts during a period of five years (2000–2004).