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From: [Potsdam Institute for Climate Impact Research \(PIK\)](#) via [ScienceDaily](#)
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Shift in global winds caused record flooding in the Balkans

Disastrous floods in the Balkans two years ago are likely linked to the temporary slowdown of giant airstreams, scientists found. These wind patterns, circling the globe in the form of huge waves between the Equator and the North Pole, normally move eastwards, but practically stopped for several days then -- at the same time, a weather system got stuck over Bosnia and Herzegovina, Serbia and Croatia that poured out record amounts of rain. The study adds evidence that so-called planetary wave resonance is a key mechanism for causing extreme weather events in summer. Further, the scientists showed that extreme rainfall events are strongly increasing in the Balkans, even more than the globally observed rise.

"We were surprised to see how long the weather system that led to the flooding stayed over the region -- it's like the Vb cyclone 'Yvette' was trapped there," says Lisa Stadtherr from the Potsdam Institute for Climate Impact Research (PIK), lead-author of the study to be published in *Science Advances*. "Day after day the rain was soaking the soil until it was saturated, which led to the flooding that reportedly caused several dozen casualties and 3.5 billion Euro of damages."

While the mean daily rainfall in the Balkans has increased only a little since 1950, the intensity of the strongest rainfall events rose by one third, the scientists found. In May 2014, daily rainfall amounts were locally bigger than ever before in the observed period. The frequency of such potentially devastating extremes in the Balkans, though they're still rare, doubled over the past sixty years.

"We had a similar situation in 1997 in Germany, resulting in the Elbe flooding"

"This is worrying, all the more because we're seeing increasing extreme rainfall in many parts of the globe," says co-author and PIK project head Dim Coumou. "The changes over the Balkan are substantially larger than those expected from simple warming of the air." Regional temperatures rose by one degree since the middle of the past century, and the increased water holding capacity of warmer air intensifies heavy rainfall by about 7 percent per degree of warming. "Yet the observed rainfall changes in the Balkans are roughly five times that much -- hence other factors must have come into play."

[Serbia flooding](#) image via Shutterstock.

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