



Floods in Central Europe in June 2013

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Several days of heavy rain combined with saturated soil at the end of May and beginning of June 2013, led to extreme flooding in vast areas alongside the major rivers of Central Europe. A quasi-stationary low pressure system brought moist, warm air from the east and northeast into Central Europe causing massive amounts of rain in Southern Germany and Western Austria between the end of May and the beginning of June. Orographic enhancement of precipitation along the northern side of the Alps played an important role. This study evaluates how well the extreme event was captured by ECMWF's model system. ECMWF's ensemble forecast gave an early indication of heavy precipitation and the high-resolution forecast captured the spatial distribution very well. Also satellite observations indicated that there were extremely wet soil conditions. The European Flood Awareness System (EFAS) predicted high to extreme flood events, and a total of 14 flood alerts and watches were sent during the flood period. Although a signal of a hazardous event was detected as far a week in advance in the forecast models, the severity of the event was not fully captured. The models predicted the spatial extent and location of the extreme precipitation well, but the magnitude was underestimated. Experiments with higher resolution in the atmospheric models show some improvement in the magnitude, but the amount of precipitation was still underestimated.