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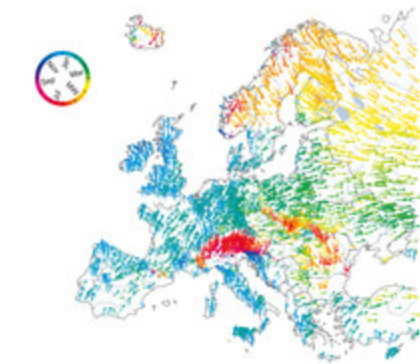
2017-08-11 [[Florian Aigner](#) | [Press Release 46/2017](#)]

Climate change shifts timing of European floods

A linkage between climate change and floods has been identified using a river flow dataset of unparalleled scale and diversity. This is the first time this link has been demonstrated at a continental scale using observational data.



Flooding in August 2005 in Kappl-Nederle (Paznaun Valley, Tyrol) [1]



Average time of floodings over the year: winter floodings - blue arrows (up), summer floodings - red arrows (down).

hand, the highest magnitude floods are associated with summer downpours. In North-Eastern Europe, the risk of flooding is at its highest in spring because of snow melt. The timing at which floods occur is thus much more directly related to the climate, in contrast with the absolute magnitude of the flood event.

Flood data from all over Europe have been meticulously compiled, screened and statistically analysed. These show that the floods in Europe have indeed shifted considerably over the last 50 years: *"In the north-east of Europe, Sweden, Finland and the Baltic States, floods now tend to occur one month earlier than in the 1960s and 1970s. At that time, they typically occurred in April, today in March,"* says Günter Blöschl. *"This is because the snow melts earlier in the year than before, as a result of a warming climate".*

In parts of northern Britain, western Ireland, coastal Scandinavia and northern Germany, on the other hand, floods now tend to occur about two weeks later than they did a couple of decades ago. Later winter storms are likely to be associated with a modified air pressure gradient between the equator and the pole, which may also reflect climate warming. The study sheds light on the complexity of flood processes in north-western Europe; on the Atlantic coasts of Western Europe, 'winter' floods in fact typically occur earlier, in the autumn, as maximum soil moisture levels are now reached earlier in the year. In parts of the Mediterranean coast, flood events occurring later in the season are aligned with the warming of the Mediterranean.

"The timing of the floods throughout Europe over many years gives us a very sensitive tool for deciphering the causes of floods," says Günter Blöschl. *"We are thus able to identify connections that previously were purely speculative."*

The advances in flood research have been made possibly by an ERC Advanced Grant awarded to Günter Blöschl in 2012, which allowed him to establish numerous international co-operations across Europe and thus closely examine the connection between climate and floods.

Original publication: Blöschl et al., Changing climate shifts timing of European floods, Science, 2017.

[Photo download](#)

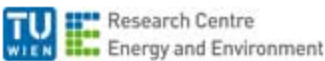
[1] Foto: ASI / Land Tirol /BH Landeck

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