

From Meteorological to Hydrological Drought in Europe: Amplification and Recovery

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Abstract

Climate change will increase in frequency and intensity of period with below than normal precipitation. During such periods, known as meteorological droughts, the decline in annual run-off may be proportionally larger than the corresponding decline in precipitation. Reasons behind this exacerbation of runoff deficit during dry periods remain largely unknown, and this challenges the predictability of when this exacerbation will occur in the future and how intense it will be. In this presentation I will discuss the role played by evaporation and subsurface storage in the propagation of the meteorological drought as well as processes related to the amplification and recovery of such phenomena. Understanding this has important implications for defining sustainable water management strategies and understanding potential ecological traits and is becoming more and more urgent due to the increasing frequency and magnitude of drought events like the one that has hit Italy in 2022.

Keywords: climate change, Europe, hydrological drought, meteorological drought.

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