



Sustainable, Decentralized Flood Protection and Thermal Use

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Deadline for manuscript
submissions:

18 November 2021

Message from the Guest Editor

Due to effects of progressing global climate change on a regional and local scale and extensive changes in land use, increased flooding events are expected in the short and also long term and will cause substantial economic damage.

An accumulation of such devastating flood events is expectable in the next years as land use pressures have intensified and will be intensifying in the future. Climatic conditions are supposed to be changing so that intense rain events will increase in terms of intensity, frequency, and variability. Sustainable and effective solutions have to be developed. Decentralized and local-based flood protection is one of the sustainable approaches and key technologies for reducing surface runoff and retaining water locally. Shallow geothermal use for heating and cooling is one sustainable extension for decentralized flood protecting areas due to the well-known local pedological and vegetation conditions and close distance to infrastructure. The combination of these two technologies will help to develop comprehensive decentralized sustainable approaches dealing with the upcoming effects of progressing global climate change.





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