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The significance of the solid transport during flash floods

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The increase in intensity of the torrential rains in Romania as a direct consequence of global warming has triggered the formation of flash floods especially in small and very small river basins leading to important losses, both in terms of human lives and material goods.
The paper „The significance of the solid transport during flash floods" focuses on a few flash floods that developed over very short periods of time, mainly between 2-4 hours that have taken place all over Romania, in various regions and landshapes of the country: Tecuel river in Barlad river basin, Grinties river in Bistricioara river basin, Sambata river in Olt river basin.
These flash floods were started by heavy downpours that have fallen over small areas of land and mounted 100-130 l/sq m, generating liquid discharges with an exceeding probability of 1% to 0.5%.
The important rainfall that affected the slopes of these river basins (mostly poorly covered with vegetation and especially forests) has generated important erosional processes that produced large quantitites of solid material which was eventually carried downstream by the water torrents.
The high liquid discharges produced during such episodes made possible for large solid sediments to be transported, many of them having > 400 mm in diametre. These boulders blocked the natural flow of waters in the river bed leading to accumulation of important volumes of water behind the so-formed barriers and flooding the agricultural fields ,crops and households located in the nearby vicinity.
In order to present this extreme phase of hydrological regime, the author has provided information regarding the meteorological and hydrological characteristics on the three rivers as well as an evaluation of the damaged produced.
The photos that accompany the paper show very clear the effects that the transport of such big solid sediments had.