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Downscaling of the precipitation amount in the river catchments during the maximum rainfall runoff periods

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Different downscaling methods of the precipitation amount into rivers cathements are discussed there as well as peculiarities of precipitation and pressure fields, influencing formation of rainfall runoff during warm season in Lithuania. The greater the amount of precipitation the greater an increase of the absolute dispersion of precipitation. This relation is not so clear in many small area catchments, because of the unknown probability of the very intensive rainfalls. Relative dispersion expressed by relation between standard deviation in the area and the precipitation amount seems to be dependent also on precipitation length and the movement of pressure systems. Analysis showed that rainfall rate is the primary contributor to the flash floods in the small catchments located within the plain landscapes in Central Lithuania whereas precipitation induced by complex synoptic systems forces to increase the runoff in larger rivers and streams located in the rolling lanscape with sandy soils. Largest estimation errors are related with the southern cyclones systems which usually produce the sharp precipitation rate gradients in the roar side and the hardly predictable runoff volume on the local scale.