Breakout session K. Extremes

In this breakout session, we will focus on the topic of multivariate extremes and the associated risks. Atmospheric, hydrological and earth science spend important efforts on estimating risk of catastrophes at a very large set of locations all over the world. Typically, this is done separately at each single location so that one e.g. tries to estimate risks of flooding at an individual dam, and then uses the result for design and operation at this dam. However, there seems to be few tools available for estimating joint risks, say the risk that at least one of the perhaps several thousand dams in a country is flooded during the coming year. An accurate assessment of such risks would, in particular, provide valuable information for national and regional authorities when planning their disaster risk management strategies.

Are there methods and data available which makes it possible to make such risk estimates? In particular, how do joint risks change if e.g. design criteria at individual dams are changed? And, if not, could such methods be developed? These problems seem both important and exciting, with climate change adding to their importance.

A few references, not that close to the problem:

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