

## **River bed variation in flood seasons: a stochastic method**

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**Abstract** River bed variation may be one of the possible causes of flood disasters during the flooding season. Due to the lack of topographic information prior to and following a flood event, let alone during such an event, it is hard to accurately assess the flood impacts on the river bed. The Monte Carlo method is used to quantify the uncertainty in the morphological response due to the future discharge hydrograph. The results show that the variation range of the bed level is of the order of several metres for the river constriction in the middle and lower Yangtze River. The largest floods in the 20th century are evaluated from the morphological changes of the river bed. The flood severity is not only defined by its peak discharge but also by its volume and duration.

**Key words** flood season; Monte Carlo method; river morphology

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