

Home

Online Library HESS

- Recent Final Revised Papers
- [Volumes and Issues](#)
- Special Issues
- Library Search
- Title and Author Search

Online Library HESSD

Alerts & RSS Feeds

General Information

Submission

Review

Production

Subscription

Comment on a Paper

Impact
Factor
2.270

ISI
indexed



- [Volumes and Issues](#)
- [Contents of Issue 2](#)
- [Special Issue](#)

Hydrol. Earth Syst. Sci., 6, 229-238, 2002
www.hydrol-earth-syst-sci.net/6/229/2002/

© Author(s) 2002. This work is licensed
under a Creative Commons License.

Climatic control on the variability of flood distribution

V. Iacobellis¹, P. Claps², and M. Fiorentino³

¹Dipartimento di Ingegneria Civile e Ambientale - Politecnico di Bari, Via E. Orabona, 4, 70125, Bari, Italy

²Dipartimento di Idraulica, Trasporti e Infrastrutture Civili - Politecnico di Torino, C.so Duca degli Abruzzi 24, 10129 Torino, Italy

³Dipartimento di Ingegneria e Fisica dell'Ambiente - Università della Basilicata, Contrada Macchia Romana, 85100, Italy

Email for corresponding author: v.iacobellis@poliba.it

Abstract. The variability of the second order moments of flood peaks with respect to geomorphoclimatic basin characteristics was investigated. In particular, the behaviour of the coefficient of variation (C_v) of the series of annual maximum floods was analysed with respect to its dependence on physically consistent quantities. The results achieved were in fairly good agreement with real world observed characteristics and interesting insights on the relationship between C_v and basin size were found. It appears that C_v is controlled mainly by the climate and by some water loss features. Many observations reported in the literature show a decrease of C_v with basin area A , usually ascribed to the limited spatial extent of extreme events, which leads to a decrease with area of the C_v of areal rainfall intensity. An increase of C_v with the area is also sometimes observed for small basins. Such different behaviours were accounted for by the concurrent effect on two parameters that affect the C_v (A) relationship, representative of the way rainfall losses and effective rainfall intensity scale with the basin area.

Keywords: floods, climate, coefficient of variation, scaling.

[Final Revised Paper](#) (PDF, 678 KB)

Citation: Iacobellis, V., Claps, P., and Fiorentino, M.: Climatic control on the variability of flood distribution, Hydrol. Earth Syst. Sci., 6, 229-238, 2002. [Bibtex](#) [EndNote](#) [Reference Manager](#)



Search HESS

Library Search

Author Search

News

- New Service Charges
- Financial Support for Authors
- ISI Impact Factor: 2.270

Recent Papers

01 | HESSD, 17 Mar 2009:
A general real-time
formulation for multi-rate
mass transfer problems

02 | HESSD, 16 Mar 2009:
Calibration of a crop model
to irrigated water use using a
genetic algorithm

03 | HESSD, 16 Mar 2009:
A Bayesian approach to
estimate sensible and latent
heat over vegetation

04 | HESS, 13 Mar 2009:
Soil moisture retrieval
through a merging of multi-