

[Persistence-based tracking of rainfall field maxima](#)

Publication Type:

Report Series

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Source:

IMATI Report Series, CNR-IMATI, Number 16-11, Genova, p.16 p. (2016)

URL:


<http://irs.imati.cnr.it/reports/irs16-11>

Keywords:

[Critical points](#), [Persistence analysis](#), [Storm tracking](#)

Abstract:

In this paper we propose a novel methodology for tracking the maxima of rainfall precipitation fields, whose changes in time may give interesting insights on the evolution of storms. Our approach is based on a topological analysis of rainfall data allowing for the extraction of the most prominent, and hence meaningful, rainfall field maxima. Then, an ad-hoc bottleneck matching is used to track the evolution of maxima along multiple time instances. The potential of our method is exhibited through a set of experiments carried out on a collection of observed punctual rainfall data and radar measurements provided by Genova municipality and Regione Liguria.

 [16-11.pdf](#)