

STAHY2018-16
STAHY 2018 Workshop workshop,
24–26 September 2018, Adelaide, Australia
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Preliminary analyses on scale-invariance signature on IMERG v04 Global Precipitation Measurements

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Multifractal models proved to be very efficient tools in reproducing observed space-time rainfall variability. While they certainly offer good potential for practical applications, such as coupling meteorological and hydrological models for flood forecasting, their effective calibration requires the investigation of scale invariance laws on high resolution space-time precipitation fields. In the last decades, successful calibrations have been pursued using remote sensed measurements in some target areas. Nowadays, new opportunities arise from the Global Precipitation Measurement (GPM) mission, launched in 2014, which provides a worldwide precipitation monitoring at unprecedented spatiotemporal resolution. The objective of this work is to investigate the scale-invariance signature on GPM IMERG v04 precipitation products at 0.1 degree and 30 minute resolution in space and time, respectively. Results are then evaluated against a high density rain gauge network in Sardinia (Italy).