



A 10-day mean surface water extent at global scale at 0.25°x0.25° spatial resolution, from 1993 to present: the Global Inundation Extent from Multi-Satellites 2.0 (GIEMS 2.0)

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An initial methodology was developed to estimate the extent and dynamics of surface waters, at global scale, from multiple satellite observations (passive and active microwave observations and visible and near infrared). A monthly estimate of surface waters was produced for 1993-2007, with a 0.25°x0.25° spatial resolution: the Global Inundation Extent from Multi-Satellites (GIEMS) (Prigent et al., 2007, 2012; Papa et al., 2010). This dataset has been extensively used by the community, for methane emission estimation, for hydrological modeling for example. The data set has also been downscaled up to 90m, for local applications (Aires et al., 2017).

This initial GIEMS methodology required key ancillary data, and to obtain a climate quality dataset, these data must be of similar provenance and of constant quality over time. However, some data used in this initial method are not available after 2007. A new methodology has been developed that requires less ancillary data, to overcome the problems of discontinuity of data sources over long time record.

We will describe the new GIEMS methodology, along with the necessary data for the processing. Preliminary results will be presented. The new methodology is very satisfactorily implemented up to 2009, but satellite inter-calibration problems from the SSM/I to the SSMIS instruments affect the time series starting in 2010. This issue will be documented and the work underway to solve the problem will be described.

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