

# **WMO Solid Precipitation Intercomparison Experiment (SPICE): Report on the SPICE Field Working Reference System for precipitation amount**

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## **Abstract**

The accurate measurement of solid precipitation plays a major role for water and risk management as well as climate monitoring, yet its observation is very complex and often afflicted by large uncertainties. WMO SPICE is an international coordinated assessment of the ability and reliability of automatic sensors to accurately measure solid precipitation. The study officially started in October 2012. Today, 15 countries with 20 host-sites and more than 20 instrument providers are contributing to this effort worldwide. Most of the current and emerging technologies used internationally for the measurement of solid precipitation are being evaluated during this multi-year study.

One key challenge in the design of the intercomparison has been the definition of a field reference, which would enable the derivation of defensible results, meeting the project objectives. To ensure the comparability between the results from different participating sites, common field references needed to be defined and linked to the Secondary Field Reference System defined at the conclusion of the last WMO Solid Precipitation Measurement Intercomparison (1998).

The paper will provide an overview of the first SPICE report, to be published by CIMO in 2014, which has as primary focus the definition of the levels of Field Working Reference Systems for the intercomparison, including methodologies applied for deriving the field reference datasets and assessing its uncertainty, primarily based on the data collected during the first year of SPICE. By publishing this report, the SPICE team wants to initiate a conversation with the broader community on the issue of references in order to achieve an increased clarity and acceptance of the results reported in the Final Report.

The report is the result of the contribution of the entire SPICE team.

## **SPICE web-site**

<http://www.wmo.int/pages/prog/www/IMOP/intercomparisons/SPICE/SPICE.html>