

# ***Interactive comment on “Bias Corrections of Precipitation Measurements across Experimental Sites in Different Ecoclimatic Regions of Western Canada” by Xicai Pan et al.***

## **Anonymous Referee #1**

Received and published: 4 July 2016

The paper is worthy of prompt publication. The methods, data and analysis support the Authors conclusion. The references are appropriate. The manuscript is well-written, logically organized and the figures and tables are appropriate, still some minor technical corrections are suggested in the following.

The Author investigate the impact of bias correction algorithms and quality control procedures on the observation of sub-hourly precipitation in Canada. In particular, they focus on the comparison of Geonor accumulating gauges and tipping bucket rain gauges measurements. The proposed quality control procedure aims to detect and properly remove not plausible measurements, while the correction for wind-induced

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undercatch, which is tested but not developed in this paper, should correct for measurement biases, especially in the case of solid precipitation. The pros and cons of the quality control procedure are clearly described by the Authors. The impacts of the bias correction algorithm for different ecoclimatic regions in Canada is reported and the Authors carry out a detailed analysis for monthly, seasonal and annual time aggregations. In particular, they quantify the correction for the selected sites. In conclusion, the Authors stress the importance of (1) quality control for precipitation measurements and (2) the inclusion and testing of a correction for wind-induced undercatch of solid precipitation measurements within the post-processing routines of the raw measurements, especially in cold regions.

Minor corrections:

- page 7. line 13. “we have found t most events”
- page 15. Wahl et al. And Wolff et al. reference should be moved after Wang et al.
- Fig 4. “Note the different scales of y-axis in Fig 4n”, still the scales are not different.

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