

# ***Interactive comment on “Automatic monitoring of weather and climate in mountain areas. The case of Peñalara Meteorological Network (RMPNP)” by L. Durán and I. Rodríguez-Muñoz***

## **Anonymous Referee #1**

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Review of the manuscript Number: AMT-2015-248 Automatic monitoring of weather and climate at mountain areas. The case of Peñalara meteorological network (RMPNP) by L. Durán and I. Rodríguez-Muñoz submitted for publication to the Atmospheric Measurement Techniques

The paper presents a network of five automatic weather stations located in complex terrain, at moderate altitude (between 1102 and 2079 m MSL). The paper is quite well written and organized, but, in my opinion, it is more suitable as a technical report than as a scientific paper, as no clear elements of novelty are present. A review from an English native speaker is strongly recommended.

Major remarks Most of the manuscript discusses the difficulties in establishing a net-

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work of weather stations in mountain areas, repeating some concepts that are not new in the mountain meteorology community (icing conditions, remoteness, ecc.). Moreover, in the present case it seems that there are some problems associated with this meteorological network, especially for what regards wind and precipitation measurements. In fact non-heated mechanical anemometers and non-heated automatic rain gauges were installed, even though icing conditions may occur in many months of the year. For example in the paper it is said that “the non-heated rain-gauge used at RMPNP have been blocked with snow during many winter, fall and spring precipitation events” and “[precipitation] observations should be used with precaution during winter, spring and fall”. So, why are heated instruments not used in this meteorological network? Are there limitations associated with the power needed by this kind of instruments? This aspect is not mentioned in the paper. The manuscript does not present new measurement techniques, nor algorithms to correct data collected in difficult conditions such as in mountain areas. In the paper the authors mention the fact that an algorithm to validate precipitation measurements and in particular to correct measurements of non-heated pluviometers during snow falls has been developed. However this algorithm is not presented. The manuscript would improve significantly by the presentation of this or similar algorithms, rather than enunciating quite common arguments about measurements in mountain areas. Finally, one of the motivations of this work seems very narrow in focus: in the abstract the author say that “discussion about the representativeness of the data are shown to be taken into account for future users of this data base”.

Minor remarks Page 3, line 60: An article misses in this sentence. Page 3, line 62: Please reformulate this sentence. Page 3, line 63: Some results [...] ARE included. Page 3, line 65: “This work” and not “This works”. Page 3, line 69: Some discussions [...] ARE included. Page 5, line 139: Sustainability of the network NEEDS to be guaranteed. Page 7, line 175: THESE phases... Page 7, line 175: data ARE... Page 7, line 177: Please reformulate this sentence. Page 8, line 209: has SUFFERED. Page 8, line 226: data stored TROUGH the years. Page 11, line 307: A deep analysis. Page

11, lines 315-316: this is something that NEEDS special attention. Page 13, line 350: Automatic techniques ARE feasible. Page 13, line 366: that are EXECUTED. Page 14, lines 377-379: radiation measurements are mentioned here, in the conclusions, for the first time.

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