

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 #2

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Scientific significance

The paper describes installation and operation of several weather stations located in a mountain environment in Sierra de Guadarrama at Peñalara, close to Madrid (Spain).

Many of the ideas expressed in the paper, regarding challenges posed to meteorological observations and ways to address them, aren't new and, quite frankly, some of them are just a matter of common sense. In this sense Chapter 2 isn't really particularly interesting.

Scientific quality

The scientific approaches to the problems of sensing and data acquisition in remote

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locations are addressed, but in a rather quick and non exhaustive way. For instance, it would be of great interest to go in deeper detail about the data storage and processing SQL environment, as well as knowing issues, reliability, power consumption and so on of GPRS transfer in such remote and possibly not-thoroughly covered areas.

The referee appreciates the preliminary analysis of weather data presented in Chapter 3, which isn't completely within the scope of the journal but it adds clarity and interesting results.

Some issues, though: - we are not entirely sure you can assume the temperature differences between adjacent sites as mean lapse rate (line 258). Maybe a reference would be appropriate. - About wind time series (line 273): mechanically driven sensors have been chosen, even though the authors admit they may have been a bad choice in this environment due to rime and ice and mechanic blockages. Why were they chosen? Have the authors considered using sonic anemometers, which do not suffer from these problems? - Figure 14 describes the relationship between differences between different rain gauges and hours per month with relative humidity over 80% and temperature below 5 °C. In the text (line 334) it is stated that "a significant linear relationship [...] have (sic) been found". Just by looking at the figure this significant relationship isn't evident at all. Maybe the authors can explain this better by adding some statistical evaluator of this fit's goodness. - line 337: how is the mean zero isotherm calculated? Maybe the authors want to go into some details about this. - it would be interesting to know something more about the data validation algorithms for precipitation and the two-phase validation process for maintenance.

Technical corrections

The paper is clear and its ideas are presented in a comprehensible and well structured way. The referee encourages the authors to let an English mother-tongue colleague do the manuscript proofreading. The following is a list, probably not comprehensive, of typos and grammar errors:

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- line 13: "conlussions" instead of "conclusions"; - line 24: "as done at" instead of "as done in"; - line 58: "above the 2000 masl" instead of "above 2000 masl"; - line 60: The sentence isn't really comprehensible; - line 62: "its" should be deleted; - lines 65 and 70: "pretend" used incorrectly (it means "simulate" or "deceive"); - lines 74, 84 and 131: "sitting" instead of "siting"; - line 94: "vandalism acts" instead of "acts of vandalism"; - line 96: "these kind" instead of "these kinds" or "this kind"; - line 134: "save conditions" instead of "safe conditions"; - line 139: "need to be" instead of "needs to be"; - line 155: "mostly of the resources" instead of "most of the resources"; - various instances: "height" is used instead of "altitude" or "elevation"; - line 237: "homogeinity" instead of "homogeneity"; - line 253: "ground level to rising" instead of "raised ground level"; - line 273: subchapter 3.2 should be 3.3, and 3.3 at line 294 should slide to 3.4; - lines 279 and 282: "loose" instead of "lose"; - line 278: "as long with" instead of "along with"; - line 291: "Gudarrama" instead of "Guadarrama" - line 295: "magnitude" instead of "quantity"; - lines 303,319,336,381,382: "rain-gauge" instead of "rain gauge"; - line 335: "have been found" instead of "has been found"; - line 350: "is feasible" instead of "are feasible" - line 351: "strong weather dependent" instead of "strongly weather-dependent"; - line 353: "has shown" instead of "have shown"; - line 371: "there have not been found indications" instead of "no indications have been found" - lines 380, 614: according to BIPM, symbol $^{\circ}\text{C}$ must be separated from the value, so "5 $^{\circ}\text{C}$ ", not "5 $^{\circ}\text{C}$ ".

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