

## ***Interactive comment on “Parameterization of atmospheric long-wave emissivity in a mountainous site for all sky conditions” by J. Herrero and M. J. Polo***

### **Anonymous Referee #1**

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General comments: This paper focused on the parameterization of highland atmospheric long-wave emissivity, it is a quite interesting topic. The authors tried to search the relation between atmospheric emissivity and surface meteorological data mainly based on multivariate fitting analysis method. Unfortunately this kind of method has been used too much by earlier researchers. Additionally, the authors have pointed out that the new parameterized expression they proposed has a performance very similar to Brutsaert’s expression. Therefore, the used method of analysis and results are far from being attractive or interesting, the length of this ms is also too short. I hope the authors could explore more deep in this field!

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Specific comments: P8, Ln2- Ln5, Eqs. 2 to 3: How was the partition criterion found?

P8, Ln21, a threshold CI value of 0.83: how was the value found?

P10, Ln25, an absolute underestimation in measured up to 0.2: The authors should provide for readers the necessary data evidence for reaching the conclusion.

P11, Ln16-Ln18, The long-wave . . . are not correctly estimated by the existing models and frequently used parameterizations: Is Brutsaert's parameterization not an existing one?

P19, Fig.2a: Why are the 5-weeks moving average? For example, why is not the 1-month average?

P20, Fig. 3: The figure needs to be revised. It is difficult for readers to draw a clear distinction between three curves in the figure.

P21, Fig. 4: This figure is not a visual representation. A 3-Dimension figure will make the relation Wa-Ta- more clear or easier to understand.

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