

## ***Interactive comment on “Tomography-like retrieval of auroral volume emission ratios for the 31 January 2008 Hotel Payload 2 event” by C.-F. Enell et al.***

### **Anonymous Referee #2**

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In their manuscript, Enell et al. describe an event study using a tomography-like method for retrieving auroral volume emission ratio. The manuscript is nicely written and organized, although it would benefit of a clearer statement of the actual objective of the case study. Furthermore, the authors themselves state a "zero result". They do not elaborate the details or highlight observations leading to new hypotheses about the physics or chemistry. In fact, much of the event has already been discussed by Enell et al. (JASTP 2011) given in the references.

From the instrumentation and methodology point of view, the tomography-like reconstruction has been described in detail by Gustavsson (2000). In my opinion, the method

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has a lot of potential but, at the same time, introduces questions relevant to experimentalists. What is the effect of absolute calibration? Or, more accurately, how does the output vary as a function of geometric and intensity calibration quality, atmospheric effects (low elevations), flat-field quality and other real practical issues? What about error estimates? It would be a useful contribution to investigate effects like these in a systematic manner. The manuscript in its present form provides little new knowledge for a more thorough understanding of the tomography-like method. This knowledge would be of significant importance for end-users that may want to use this potentially very useful tool in their atmospheric studies.

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