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## ***Interactive comment on “Toward the assimilation of images” by F.-X. Le Dimet et al.***

### **Anonymous Referee #3**

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This paper is a very interesting review paper on the problem of assimilation of image data. It is well written and nicely documented. I particularly appreciated the work of formalization of this new type of data in order to incorporate it in the traditional formalism of 4D VAR, that is used for conventional data. This is performed in section 5 and illustrated by numerical experiments in section 6. The paper is written in a nice way, so that reading is really pleasant. My comments, both on the theoretical aspects as well as on the applications to image assimilation, is that this paper is worth being published.

I suggest a certain number of improvements so that the paper becomes excellent :

1) I did not understand the order of the figures. Usually the figures have numbers that correspond to the appearance in the paper. This is not the case here. For instance figure 6 appears very early in the text, before some figures that have smaller numbers.

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Why ? I think that it is better to change the numbers of the figures to respect the general rule of appearance in the text. 2) At the end of paragraph 3.1, there is a comment on the two main types of data assimilation methods (Kalman methods and variational ones). Is it true that Kalman methods are not implemented in operational centers ? It seems to me that there is a kind of non-objectivity from the authors. 3) The thresholding procedure in 6.1.5 could be more clearly explained for non specialists of curvelets. 4) The paragraph 6.2 is not written as well as the other ones. I suggest to rewrite it in a style that is consistent with the rest of the paper and that is easier to understand.

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Interactive comment on Nonlin. Processes Geophys. Discuss., 1, 1381, 2014.

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