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Comment

## ***Interactive comment on “The new Landsat-derived glacier inventory for Jotunheimen, Norway, and deduced glacier changes since the 1930s” by L. M. Andreassen et al.***

### **Anonymous Referee #2**

Received and published: 13 June 2008

This paper by Andreassen et al. presents a thorough study of glaciers and their changes in the Jotunheimen region of Norway. Discussion of the methods and data used is complete and easy to follow, and the treatment of sources of uncertainty and resulting error estimates is very good. Issues such as how an operator interprets what to include in an inventory as “glacier” and how to relate current inventories to past ones are key to global glacier mapping projects such as GLIMS, and this paper will be a valuable addition to the body of literature treating these topics. The paper is also valuable in its examination of differences in glacier behaviour as a function of size and topographic parameters within the region. This is important given the large climatic and topographic gradients there.

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Discussion Paper



I agree with the authors of the Short Comments that an additional column in Table 2 showing percent change in area of the glaciers by size class would be a valuable addition.

The following are specific comments that I would like to see addressed before publication.

- Page 302: “step rock walls” should be “steep rock walls”
- page 303, line 15: add “to” between “also” and “less”
- page 304, line 3: replace “excellent” with “ideal”
- page 304, line 6: “(1:50 000 scale)” is redundant with text in line 12
- page 304, line 14: replace “later” with “more recently”
- page 304, line 23: replace “let expect a” with “lead to an estimated”
- page 304, line 23: replace “of” with “for the” outlines ...
- page 305, line 6: It is unclear to me what it means to “take a photograph at a scale of 1:35 000”. The image on the film plane was likely much smaller than the printed result, thus the scales of those two things are different. I would simply report the ground spatial resolution (as is done).
- page 310, line 22: The areas given for 2003 and 2004 show an increase in area, yet you say it is equivalent to a “shrinkage”. Perhaps the areas are reversed?
- page 312, line 5: replace “missing” with “low”
- page 312, line 9ff: inconsistent use of verb tense (“were done”, vs. “we also compare”)

- page 312, line 14: What is the “interest-of-interest principle”? Exponential decay?
- page 314, line 5: Should read, “We also analysed the relationship between the glacier changes and and topographic parameters ...”
- page 314, line 6: remove hyphens after “mean” and “minimum”.
- page 315, line 13: Should be “last two”
- page 316, line 20: replace “satisfying” with “satisfactory”
- page 320, line 9: replace “intervention” with “interpretation”
- page 337, panel b, right axis label: Should be “Cum net balance, w.e. (m)”, since “m” is an SI unit symbol, but “w.e.” is not. Also, I recommend having a third vertical axis, offset slightly from the existing right one, with a separate scale, rather than putting two scales with different units on the same one.

End of review.

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Interactive comment on The Cryosphere Discuss., 2, 299, 2008.

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