

Interactive comment on “Rapid changes of the ice mass configuration in the dynamic Diablotins ice cave – Fribourg Prealps, Switzerland” by S. Morard et al.

Anonymous Referee #2

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General Comments:

This paper gives a fascinating overview of the complex processes observed in an ice cave in the Swiss Fribourg Prealps and of the possible causes of ice formation and degradation. I recommend this paper to be published after revision.

Specific comments:

1. Despite the fact that the measurement campaign reported here was very short, the authors should try to use the measured and reconstructed data to roughly estimate the magnitude and rates of ice formation or degradation and thus give more quantitative support to their hypotheses concerning processes such as sublimation and condensa-

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tion.

2. Particular care is required with terms referring to air temperature or air displacement - please consider rephrasing for example 'cold atmospheric waves' (Fig. 4), or 'the external air temperature is thus sucked inside the cave' (3.2.2, line 9-10) and 'colder winters would favor the recharging of the cave in coldness' (4.4. line 5) or 'air flow was blowing out / blowing airflow' (several occurrences).

3. The figures are clearly legible but please use a consistent terminology for the different sectors of the cave - e.g. it is not clear whether the 'lower gallery' corresponds to the 'lower entrance' or not.

4. For future analyses, the authors could consider the use of automatic cameras, terrestrial surveys or laser scanning to allow the observation and quantification of changes in ice volume within the more easily accessible parts of the cave.

Technical Comments:

1. The quality of the English is rather poor at the moment and the language needs to be revised carefully before re-submission.

Interactive comment on The Cryosphere Discuss., 4, 1035, 2010.