**The Cryosphere
Discussions**

Interactive comment on "Linkage of cave-ice changes to weather patterns inside and outside the cave Eisriesenwelt (Tennengebirge, Austria)" *by* W. Schöner et al.

Anonymous Referee #1

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General Comments

The paper is very interesting and adds useful information about processes in a dynamical ice cave. The study uses a combination of in-situ measurements and physical equations to determine the role of air circulation in the processes of ice mass loss / gain. The paper also shows the linkage over 2 years between the outside and the inside atmosphere of the cave. The paper is well written and structured. I will recommend this paper for publication highly.

Specific comments

It would have been interesting to have the results of the 2 years of measurements in all

the figures.

Fig. 4: Do you have an idea why no accumulation is recorded in autumn 2007, whereas it was clearly measured in autumn 2008, essentially near the entrance zone?

Fig. 7: How do you explain the sudden drop of the cave air temperature in end-May 2008 in Odinsaal (from about 0 to +1.2°C)?

Which was the problem with the rH sensor?

Role of relative humidity in the sublimation rate: In winter, rH could decrease inside the cave because of inflow of dry and cold outside air. Do you have a general idea of the relative humidity inside the cave in winter and/or in summer, taken for instance by hand-measurements? Advection of dryer air could also theoretically increase the rate of sublimation. Good data of this parameter could be interesting to analyze in future studies, also to try to determine the relative importance of air temperature, wind speed and relative humidity in the sublimation processes in wintertime.

Technical comments

Table1: Air humidity instead of Luftfeuchte. The precision of the different sensors has to be note in the table or in the text.

Figures: the date format in the x-axis is not constant for all the figures. Please change the date format in the x-axis (for instance December 2007, instead of 01.12.2007 00:00). The same remark concerns the number and the time-intervals of the x-axis ticks in the figures.

Figure 7: Order of the curves (Odinsaal is in first position in the legend of the second graph, and in second position in third graph).

p.1719, l.5 and l.13: you used "entrance-near" on line 5 and "entrance near" on line 13.

p.1719, l.12: . . . for late autumn 2008 for. . .

p.1720, l.11: . . .inside. . .

p.1721, l.9: . . .initiate an outflow. . .

p.1722, l.22: . . .importance. . .

p.1724, l.15: . . .stops.

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