

Correction to “Calibrating the ice core paleothermometer using seasonality” by Tas D. van Ommen and Vin Morgan

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The paper “Calibrating the ice core paleothermometer using seasonality” by Tas D. van Ommen and Vin Morgan (*Journal of Geophysical Research*, 102(D8), 9351-9357, 1997) contains an error. In this paper, we derive a value for the slope of the oxygen 18:temperature relation from seasonal variations in the Dome Summit South ice core, Law Dome, Antarctica. Our discussion of the possible effect of vapor diffusion includes a figure (Figure 4) showing how the derived slope depends on diffusion length L . This figure showed the correct value at the adopted diffusion length of 8 cm but had the wrong functional form. The corrected Figure 4 (shown below) actually has the inverse functional form. It may be seen that for diffusion lengths in the range 6-10 cm (which are required for reasonable shape-matching to the temperature curve) our contention remains, namely, that “... no reasonable alteration of the assumptions relating to diffusive smoothing can yield a gradient as high as the spatial value... .”

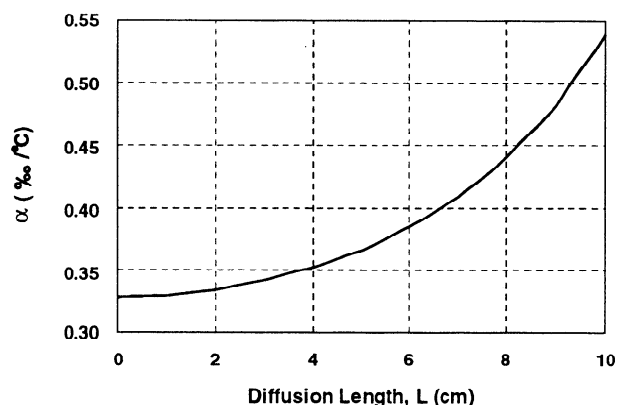


Figure 4. Derived gradient α for the $\delta \sim T$ relation as a function of assumed diffusion length parameter, L .

References

van Ommen, T.D., and V. Morgan, Calibrating the ice core paleothermometer using seasonality, *J. Geophys. Res.*, 102(D8), 9351-9357, 1997.

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