CORRIGENDUM

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The paper by Whiteman et al. (2004) presents an analytical solution for near-surface cooling in a closed basin on the basis of a linearized surface energy equation [Eq. (6) of their paper]. The definitions of the two auxiliary quantities A and B contain an error, in that the first minus sign in each of the equations should have been a plus sign. The correct versions are

$$A = f_V \sigma \varepsilon_A + g(1 - f_V)\sigma \varepsilon_S \quad \text{and}$$

$$B = f_V \sigma \varepsilon_S + g(1 - f_V)\sigma \varepsilon_S .$$

The remainder of the derivation, the form of the analytical solution, and the main conclusions of the paper are not affected by this error. The model graphs in Fig. 10 of Whiteman et al. (2004), however, were computed using the erroneous definitions of A and B. The corrected graphs are shown in Fig. 1a (next page). To retain roughly the same degree of fit with observations during the rapid cooling period, the atmospheric emissivity ε_A had to be changed from 0.7 to 0.6 and the heuristic nondimensional sidewall temperature parameter g had to be changed from 0.8 to 0.5. The new value of ε_A implies a net outgoing longwave flux of about 85 W m^{-2} in the beginning and 50 W m^{-2} at later stages of the cooling period. The value of 0.5 for the parameter g implies that the sidewall temperature is roughly halfway between the basin rim temperature and the basin floor temperature.

As in Whiteman et al. (2004), the analytical solution matches observations only during the first hours of cooling. It does not explain the observed quasi-linear temperature decrease that continues through the night, and it underestimates the temperature difference between the higher- and lower-sky-view-factor basins. If the atmospheric temperature T_A, which the surface "sees" and which is constant in the analytical model, is allowed to decrease with time, however, the downward longwave radiation decreases as well, and the model results show better agreement with observations (Fig. 1b).

Acknowledgments. We apologize for any confusion or inconvenience the errors may have created. We also thank Allison Houghton (University of Illinois) for pointing out the problem.

REFERENCE

Whiteman, C. D., T. Haiden, B. Pospichal, S. Eisenbach, and R. Steinacker, 2004: Minimum temperatures, diurnal temperature ranges, and temperature inversions in limestone sinkholes of different sizes and shapes. *J. Appl. Meteor.,* **43,** 1224–1236.

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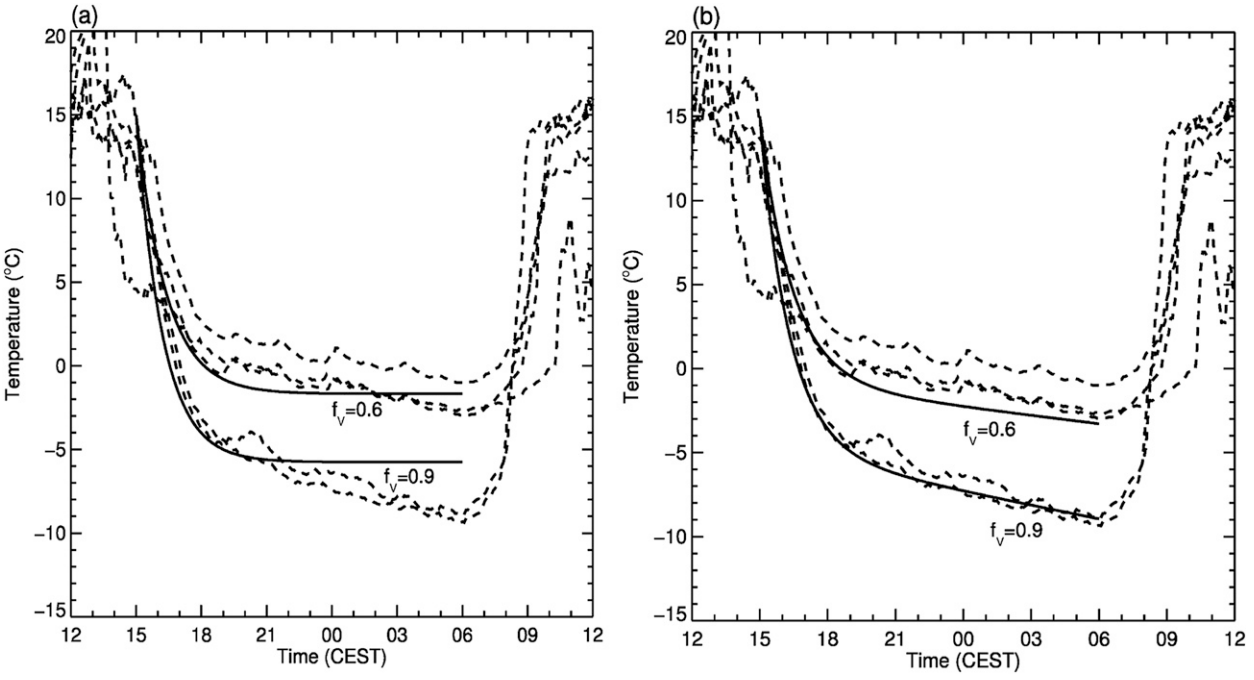

FIG. 1. Comparison of the observed temperature evolution in sinkholes D0–D1 (lower dashed lines) and D2–D4 (upper dashed lines) for (a) the analytical solution with $\varepsilon_A = 0.60$ for sky-view factors of 0.9 and 0.6 and for (b) the numerical solution with $\varepsilon_A = 0.64$ and a basin-atmosphere cooling rate of 0.5 (lower curve) and 0.3 (upper curve) K h^{-1}.