less for low and high values of relative humidity and also at upper levels where the moisture content of the air is less.

It is of interest to examine why the approximation of using $T_d$ in place of $T_c$ in formula (6) yields values of $\theta_e$ which are very close to the correct values. Keeping all the parameters except $T_c$ constant in formula (6), the change in the value of $\theta_e$ for a change in $T_c$ is

$$\delta\theta_e = -[(L_c\theta_e)/(C_pT_c^2)]\,(x\delta T_c). \qquad (17)$$

Under atmospheric conditions the following values are typical for the parameters within the square brackets:

$$L_c \sim 600 \text{ cal g}^{-1},$$

$$C_p = 0.24 \text{ cal g}^{-1}\ ^\circ\text{K}^{-1},$$

$$\theta_e \sim 300^\circ \text{ to } 400^\circ\text{K},$$

$$T_c \sim 300^\circ \text{ to } 200^\circ\text{K}.$$

With these values, it is easily seen that the expression within the square bracket varies between 8 and 25. Let us assume that $\delta T_c = T_d - T_c$. From tables 1(a) and 1(b) it can be seen that the largest values of $\delta T_c$ are of the order of 7 to 8°C when the relative humidity is 5%.

The error $\delta\theta_e$ depends on the product $(x\delta T_c)$. It may be noted that when the air is saturated $\delta T_c = 0$ and when the air is dry $x = 0$. Thus at both the extremes $(x\delta T_c) \to 0$. The largest value of this quantity occurs near relative humidity of 50%. This value is found to be about 0.05 in table 1(a) and .01 in table 1(b). With the values in table 1, the magnitude of the quantity inside the square brackets is found to be about 10. Thus the maximum value of $\delta\theta_e$ is about 0.5°C under surface conditions and much less for conditions at higher levels.

## CONCLUSION

The computation of EPT using the approximate value of lifting condensation level temperature in terms of $T$ and $T_d$ yields accurate values. This procedure is convenient for use in a computer program. The use of $T_d$ in place of $T_c$ introduces errors of less than 0.5°C in the computed values of EPT.

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# NEWS

## SYMPOSIUM ON MICROSTRUCTURE OF CEMENT AND CONCRETE

A two-day conference on Microstructure of Cement and Concrete is being organised by the Materials and Testing Group of The Institute of Physics jointly with the University of Leeds and The Institute of Metals at Tetley Hall, University of Leeds on 24 and 25 September 1985.

Five major themes have been identified—1. Development of microstructure in traditional cement pastes, 2. The influence of cement replacements *e.g.* PFA, BFS on microstructure development. 3. The influence of chemical admixtures on microstructure development. 4. Novel techniques for assessment of microstructure. 5. Degradation/ enhancement of microstructure—Alkali aggregate reaction, corrosion cabonation.

For further information apply to The Meeting Officer, The Institute of Physics, 47, Belgrave Square, London SWIX 8QX. UK.