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Solar Heating Calculations for the Venus Cloud Layer

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The cloud layer of Venus is responsible for diurnal radiative forcing variation in the Venus atmosphere due to its huge opacity and global coverage [Crisp, 1986; Tomasko et al., 1985]. Lee et al. (in press) developed an atmospheric model that successfully calculates the mesospheric radiative forcing by the cloud top. However, the result in Lee et al. shows 0.5-2.0 K/day weaker solar heating than that in Tomasko et al. in the middle and lower cloud layers in the altitude range of 50-60 km. This is possibly caused by 1) different CO<sub>2</sub> absorption calculations, including such as collision-induced and pressure-induced absorption features, and/or 2) the use of different cloud models for the lower and middle cloud layers. This poster presents my ongoing effort to update the CO<sub>2</sub> absorption data base and the cloud model to understand the discrepancy. The goal of this study is the preparation of input parameters for a mesoscale fluid dynamic model calculation.