Reply

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Dr. Hess' comments serve to bring the horizontal-divergence equation into a form convenient from many points of view. The same use of the geostrophic wind as a description of the horizontal pressure-force field can be used in the vorticity equation, which then becomes

$$\partial\zeta/\partial t = -\beta(v - v_g) - f(D - D_g) + \cdots.$$

In my paper I tried to leave the pressure terms in forms which best brought out their physical meaning.

Dr. Hess has noticed that one is able to establish that the order of magnitude of the divergence of the pressure force is as great as that of the other terms; his is a simple demonstration which fills a gap in my paper.

I would like to emphasize, however, that Dr. Hess' third numbered comment is that "if a quasi-geostrophic model is utilized, the geostrophic departures (in his form of the divergence equation) will be one or more orders of magnitude smaller . . . " *in the model*, not necessarily in the atmosphere.

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