

Reply

Lilly's principal objection is that the spiral rain bands are a "noncrucial element" in the storm system. Direct observational evidence obtained by Gentry (1964) indicates that the bands *are* important in the energetics of hurricanes. As noted on page 41, left-hand column, of my article, Gentry's measurements show that the vertical motion and temperature field in a number of rain bands in different hurricanes were correlated so that available potential energy was converted to kinetic. Gentry estimates that as much kinetic energy was produced in the bands as previous studies had indicated to be generated from all other sources in the average hurricane.

Probably some clarification should be made

as to what physical characteristics are associated with "Rossby waves". The "cascade" of energy to longer wave lengths and a counter-gradient transport of momentum, effected by Rossby waves in the general circulation, in all likelihood would be a part of any generally accepted definition of a Rossby wave. The fact that these characteristics are found in fluids where the β effect is *not* important would suggest the latter is not crucial to the formation (or definition) of Rossby waves.

Norman J. MacDonald
Massachusetts Institute of Technology
Department of Meteorology
Cambridge, Massachusetts 02139

REFERENCES

Gentry, R., 1964. A study of hurricane rain bands. N.H.R.P., Rep. 69, 85 pp.