

RADAR REFLECTIVITIES IN SUMMER MESOSCALE CONVECTIVE COMPLEXES

ANTONIO, M. de A., FIGUEIREDO, J.C., CALHEIROS, R.V.  
Meteorological Research Institute, São Paulo State University, Brazil,  
and  
PAZ, R.S.

ABSTRACT

Between December 23 and 24, 2000, one MCC developed in Paraguay and moved toward São Paulo while a smaller complex developed between the States of Mato Grosso do Sul and São Paulo, in the Southeast Brazil. Most of the larger complex (about 70 %) developed in Paraguay and north of Argentina, in the central South America, and crossed the Brazilian border heading toward the Northern and Northeastern regions of the country. The smaller complex originated just West of São Paulo border and moved east ward. Since these MCCs usually begin their dissipation phase some 3 hours after attaining maximum size, the cases dealt with here presented an exceptional behaviour in keeping their original shape when they reached São Paulo. Both MCCs were in the coverage area of the São Paulo Radar Doppler Network.

Two of the Network radars could observe simultaneously the MCCs' structures providing an unusual insight of the phenomena and their evolution, revealing reflectivity values above 55 dBZ with the associated wide areas of reflectivity of 35-40 dBZ and below. Exceptional humidity values were noted, involving an increase by one order of magnitude, i.e. From  $10\text{g} \cdot (\text{kg} \cdot \text{s}^{-1})$  to  $10\text{g} \cdot (\text{kg} \cdot \text{s})$ . The region was under the action of a weak cold front and the satellite and radar surveillance was complemented by observations from a lightning detection network. The experience gained, mainly through use of radar, with those two outstanding events is a significant contribution to the forecasting of MCCs in a very sensitive area of the country.

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First author address:

Mauricio@www.radar.ipmet.unesp.br

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