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Scott M. Rochette

The College at Brockport, rochette@esc.brockport.edu

Jose Maliekal

The College at Brockport, jmalieka@esc.brockport.edu

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An Examination of the 4 March 1999 Blizzard

Scott. M. Rochette and Jose A. Maliekal
Department of the Earth Sciences
State University of New York, College at Brockport
Brockport, NY

Abstract

On March 4 1999 sections of western New York were paralyzed by an intense storm that produced more than 60 cm (24 in) of snow in some locations, mostly falling within a six-hour period. The combination of heavy snow and strong surface winds resulted in blizzard conditions. Six counties in the Genesee Valley region were declared federal disaster areas.

This study will describe the synoptic scenario that preceded the period of heavy snowfall, and analyze the forcing mechanisms that produced the intense precipitation. It will be shown that:

1. The NWP models available to the operational forecaster at the time treated the large-scale pattern with accuracy;
2. The Eta model produced a sound forecast of the intense forcing that led to the heaviest precipitation (found in a narrow band roughly coincident with the Genesee River).

The second objective will be accomplished by examining vertical motion and its forcing mechanisms via methods often utilized in an operational setting.