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The Major Snow Avalanche Cycle of February 1986 in the Western United States

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ABSTRACT. Snow avalanches are a significant hazard in mountainous environments around the world. This paper investigates the major February 1986 avalanche cycle that occurred in the western United States, and broadly analyzes the avalanche, snowpack, and weather conditions at twenty sites. These analyses suggest that the avalanche cycle resulted from the interaction of a relatively “normal” snowpack with an exceptional storm event, which was particularly noteworthy for the amount of precipitation it produced. Composited 500-hPa anomaly maps show the event resulted from an uncommonly persistent blocking pattern that resulted in a strong zonal flow and copious moisture being funneled over the western United States. Understanding severe and widespread avalanche cycles may improve our long-term forecasting of these events, and help mitigate the resulting avalanche activity.

Keywords: avalanches, snow avalanches, avalanche forecasting, avalanche climatology.