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- Jonathan Slemmer. January 2000
- Climate of Miles City, Montana. David A. Spector and Mark H. Strobin. April 2000 Analysis of Radiosonde Data for Spokane, Washington. Rocco D. Pelatti. November 2000
- Climate of Billings, Montana. Jeffrey J. Zeltwanger and Mark H. Strobin. November 2000 Climate of Sheridan, Wyoming. Jeffrey J. Zeltwanger, Sally Springer, Mark H. Strobin. March 2001 Climate of Sacramento, California. Laura Masters-Bevan. December 2000 (7th Revision)
- Sulphur Mountain Doppler Radar: A Performance Study. Los Angeles/Oxnard WFO. August 2001 Prediction of Heavy Snow Events in the Snake River Plain Using Pattern Recognition and Regression
- Techniques. Thomas Andretta and William Wojcik. October 2003 The Lewis and Clark Expedition 18-03-1806, Weather, Water and Climate, Vernon Preston, Pocatello Idaho, December 2004
- Climate of San Diego, California, Emmanuel M. Isla, Steve Vanderburg, Christopher Medjber, Daniel Paschall, Second Edition, December 2004