



Winter 2009/10: Season of extremes by chance or forced.

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Winter 2009/10 made headlines for extreme cold and snow in all the major population centres of the industrialized countries of the Northern Hemisphere. Record cold and snow occurred simultaneously in the US, Europe and East Asia, a highly unusual occurrence. The major teleconnection patterns of the Northern Hemisphere, El Niño/Southern Oscillation (ENSO) and the Arctic Oscillation (AO) were of moderate to strong amplitude, making both potentially key players in the climate of the Northern Hemisphere during the winter 2009/10. I will compare the relative influence of both teleconnection patterns on the hemispheric temperature pattern. Much of the Northern Hemisphere temperature anomalies from last winter can be attributed as a “textbook” case of ideas and trends presented at last year’s EGU. The dominant Northern Hemisphere winter circulation pattern can be shown to have originated with a two-way stratosphere-troposphere interaction forced by Eurasian land surface lower tropospheric atmospheric conditions during autumn. In educating and in gaining the public’s trust about our knowledge of climate in general and projected climate change in particular it is important to be able to attribute extreme weather events to a predictable and physical cause rather than to simply chance.