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Coherency analysis of trend change-points in monthly temperature between the global warming and in China Mainland

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This paper introduces the algorithm of scanning detection for change-points in subsample trends, which was developed by this author, and applying to monthly temperature series of both the global warming and in China mainland for 1951/1-2017/12. The main results were obtained as follows: 1) Nine change-points, then 10 sub-periods for the global warming and 8 change-points, then 9 episodes for China mainland were detected out respectively; 2) The coherency contour pattern shows that the major areas were positive, which suggest the trend-change

directions were in phase, but that in some short-periods were negative, which denote the trend-changes were out of phase; 3) The negative coherency occurred around 1956-1960, 1963-1968, 1774-1978, 1997-2000, 2006-2010 and 2014-2017 (see figure below). The reason why the negative coherency happened is needed to be investigated further. 4) The last obvious decline in the global warming is also needed to be observed and concerned further, but it has not yet appeared in China mainland so far.

Biography

Jianmin Jiang received MS degree in 1978 from Peking University in China, and completed a Post-doctor in 2002 from University of Hawaii in USA. He was a professor at former Beijing Meteorological College and a visiting scholar to Meteorological Office College of UK and to Hamburg University in Germany. After retiring in 1999, he visited to USA and completed a post-doctor work at University of Hawaii and NOAA. His research interests are mainly in climate changes, statistical analyses and especially in change point analyses.

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