

On the **initial cause** of land surface temperature anomaly in Tibetan Plateau and **an Arctic-Tibetan connection**

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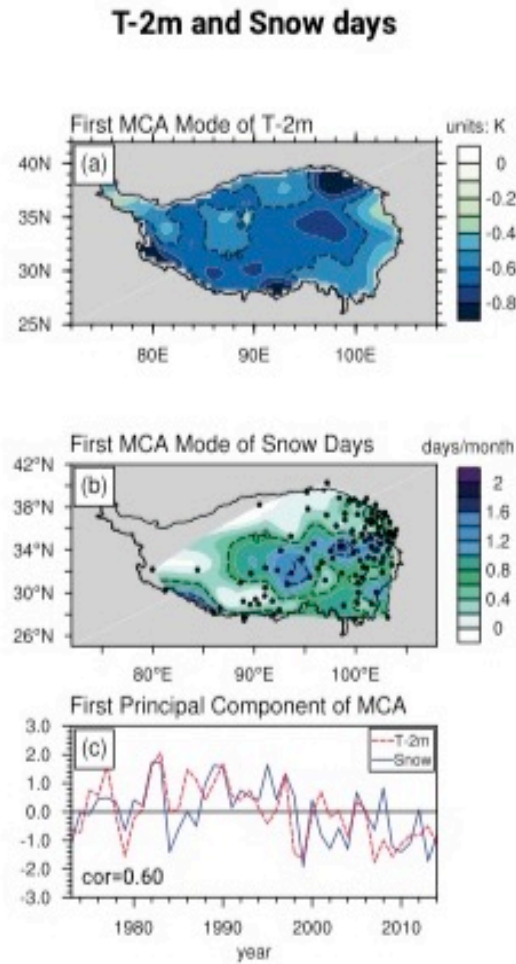
1.Nanjing University

2.University of California Los Angeles

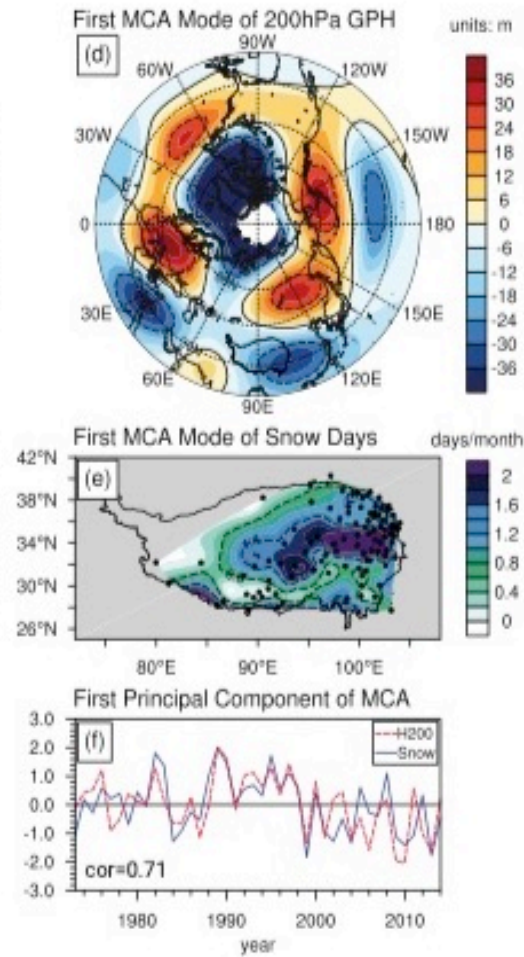
International Workshop of First Phase of GEWEX/GASS ILSTSS2S Initiative and TPEMIP, December 8-9, Washington D.C.

Results of MCA analysis

Spring (AM)
land
surface
temp
and
Snow cover
days in
FMA

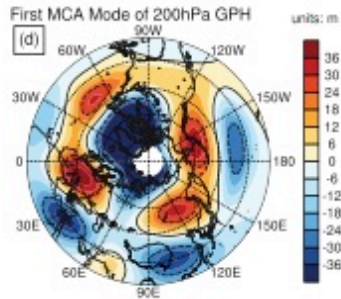


Z200 and Snow Days



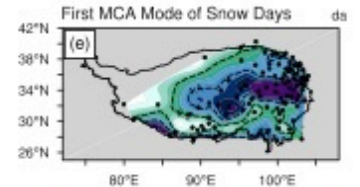
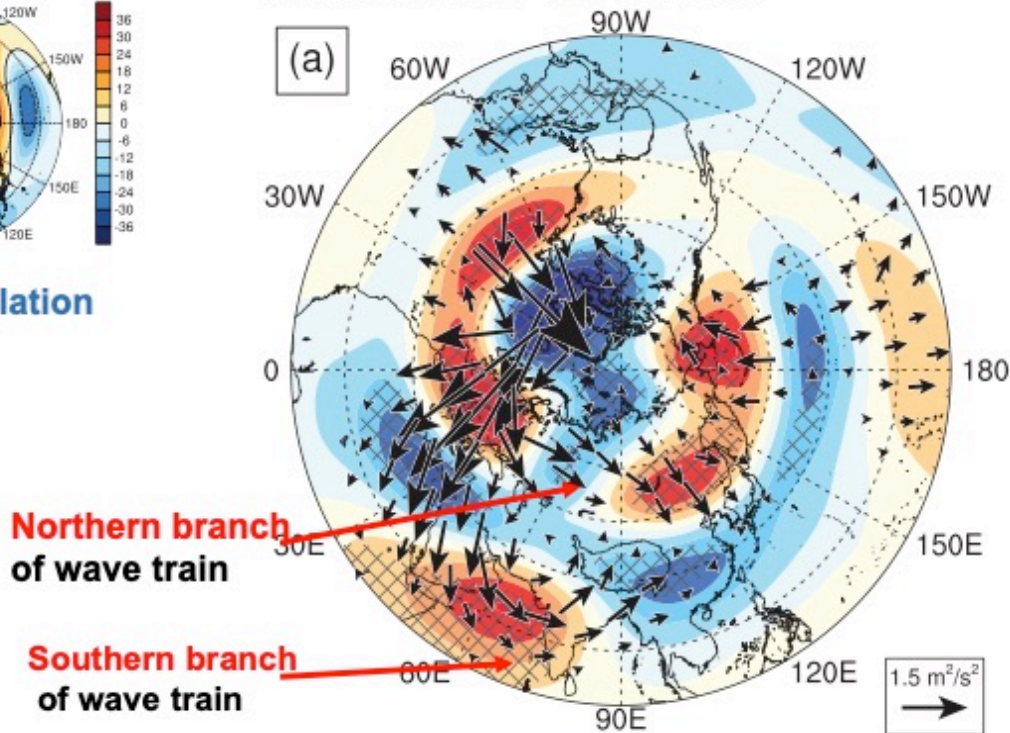
Winter (Feb)
circulation
and
Snow
cover days
in FMA

Mechanism (I): Arctic-Tibet connection



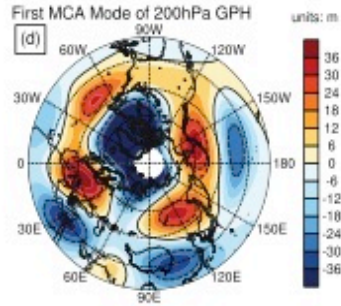
Winter circulation

Feb. 300hPa WAF for MCA Mode



Snow cover days

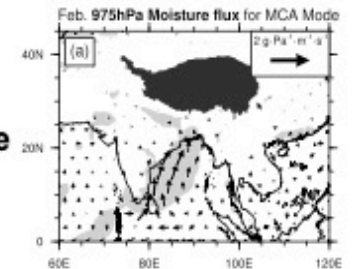
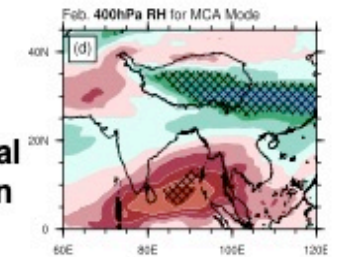
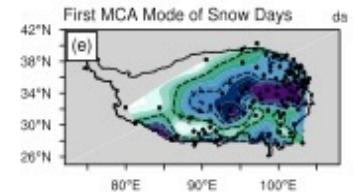
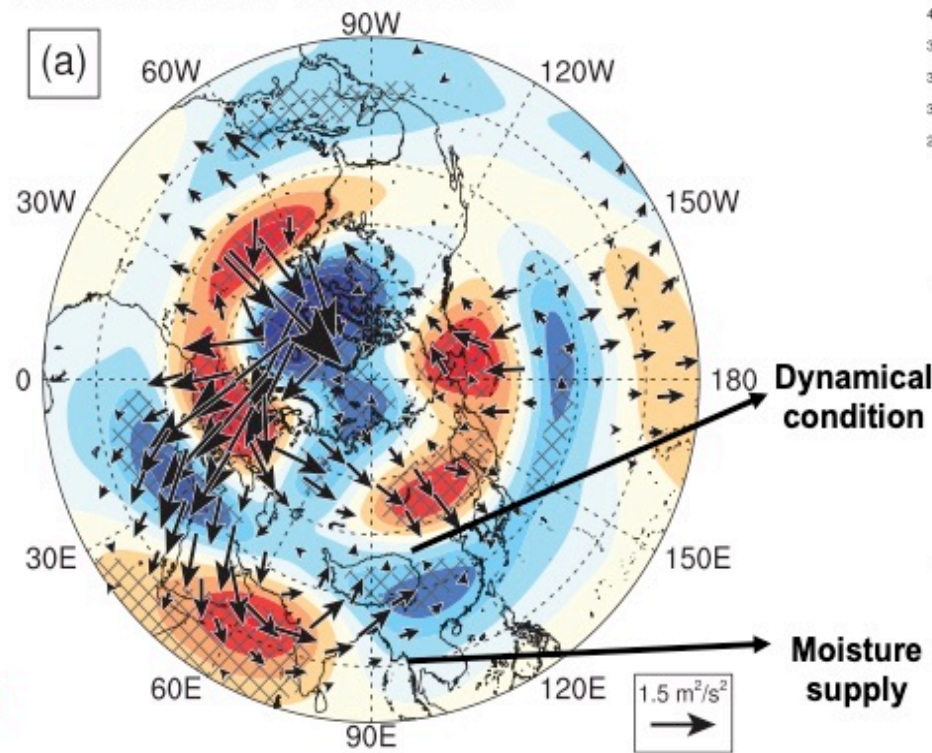
Mechanism (I): Arctic-Tibet connection



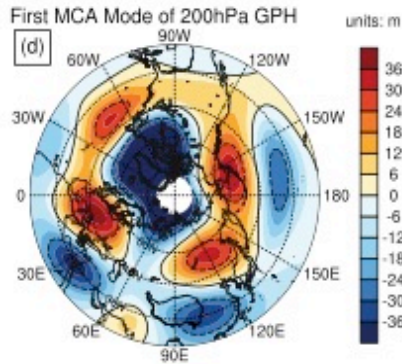
Winter circulation

Wave trains from Arctic can reach Tibet via northern and southern pathways, bringing dynamic and moisture conditions for snow fall

Feb. 300hPa WAF for MCA Mode



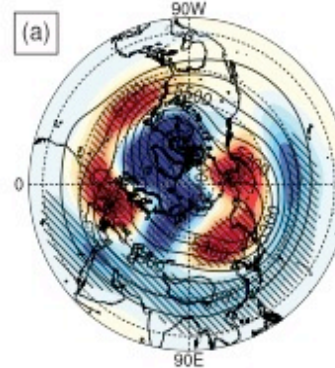
Mechanism (II) : A combined AO & WP mode



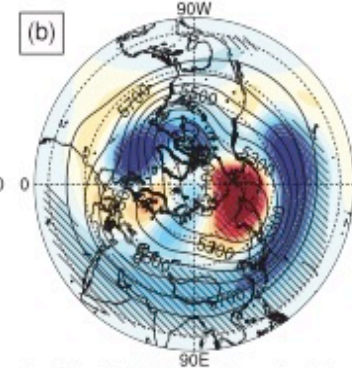
Regressed
pattern at Z500

Feb. 500hPa Geopotential Height

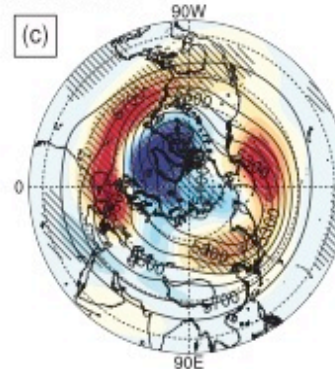
Z500 for MCA Mode



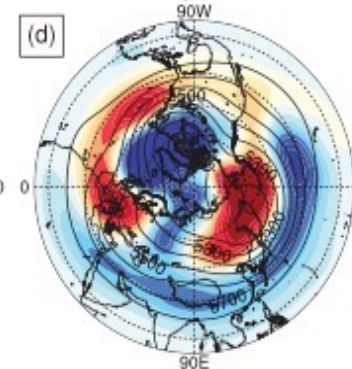
Z500 for -WP



Z500 for +AO

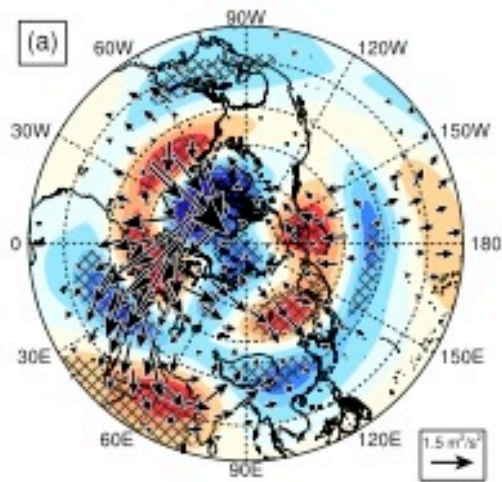


Combined Z500 by -WP and +AO

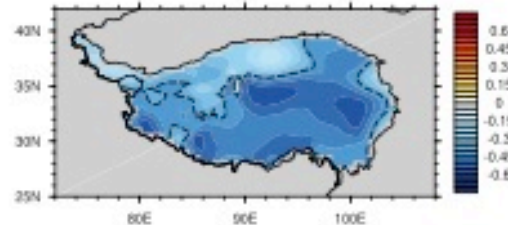
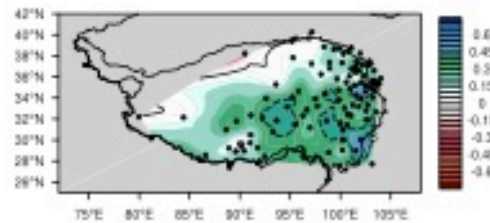


When the circulation in a combined mode of AO(+) and WP (-), an Arctic-Tibetan connection is built up

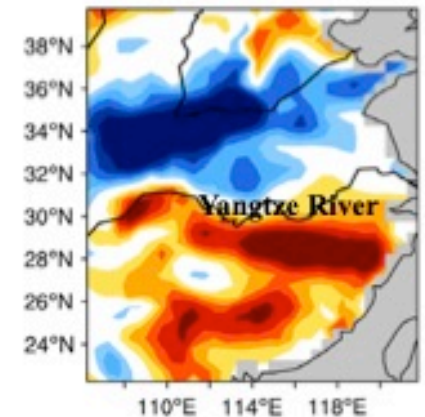
A possible source of cross-seasonal predictability?



**An Arctic-Tibetan connection
in Winter circulation**



**“Tibet memory” by
Late winter snow fall
Spring soil temperature**



**Summer rain fall
anomaly in East China**