

عنوان مقاله:

Tropical belt expansion of northern hemisphere in the middle latitudes

محل انتشار:

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خلاصه مقاله:

The expansion of the pole toward the tropical belt is thought to be due to climate change caused by human activities, in particular the increase in greenhouse gases and land use change. The variability of the tropical belt width to higher latitudes indicates the expansion of the subtropical arid region, which indicates an increase in the frequency of drought in each hemisphere. In order to change the width of the tropical belt of the Northern Hemisphere in the middle offerings, indices of precipitation minus evaporation, wind vector orbital component, stream function, tropopause surface temperature, OLR, and SLP have been used. Findings showed that the expansion of tropical belt latitude with stream function to higher latitudes with 1° to 3° latitude and the effect of Hadley circulation subsidence has increased the amplitude of evaporation minus precipitation has shown that the fraction of precipitation minus evaporation 1° to 3° latitude geographically increased. The subtropical jet has increased the movement of the upper branches of troposphere from the Hadley circulation by 2° to 4° latitude, which can have a negative effect on transient humidification systems as well as on the amount of precipitation. The extension of the pole towards the tropical belt, which is a consequence of climate change and hazards, will lead to the displacement of the pole towards the tropical side of the river, thus providing dry tropical belts to the pole; Also, the long-wave radiation of the earth's output has increased by 1° to 2° latitude and has caused an increase in heat in the upper troposphere, which has increased the dryness and slightly reduced the clouds in the upper troposphere and also caused the tropical belt to expand to higher latitudes. Has been. In general, the research findings showed that most tropical belt indicators have been increasing since 1979.

کلمات کلیدی:

Expansion, Tropical Belt, Climate Change, Drought, Northern Hemisphere

گسترش، کمربند گرمسیری، تغییر اقلیم، خشکی، نیمکره شمالی.

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