Japan Geoscience Union Meeting 2014
(28 April - 02 May 2014 at Pacifico YOKOHAMA, Kanagawa, Japan)

HTT32-09 Room:422 Time:May 2 14:30-14:45

Factor analysis and vegetation change in China Inner Mongolia through Satellite Remote Sensing

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In this study, the spatial and temporal vegetation cover change of the Inner Mongolia Autonomous Region was analyzed by using the time series satellite SPOT VEGETATION dataset from 1999 to 2012. The vegetation change trend was analyzed by the Normalized Difference Vegetation Index (NDVI), and the result was estimated by the Mann-Kendall rank statistic method. Annual maximum vegetation biomass can respond well with maximum NDVI change trend and annual vegetation product approximately similar with total amount of NDVI trend. Vegetation index has closely correlation with annual precipitation. The results revealed that the vegetation status of Inner Mongolia was affected significantly by the precipitation. Due to the benefit of return farmland to grassland and forestry policy such as forestation, cultivation of the arable land and increase the irrigation area, the vegetation in the southeast and middle south of Inner Mongolia significantly increased. In the northeast of Inner Mongolia, due to the global warming and wetland development the forestry growing period become longer that exactly reflect the vegetation cover increasing phenomenon . The vegetation distributed in middle-west of Inner Mongolia has decreasing trend and desert area was continuously extending within 14 years.

Keywords: Inner Mongolia, Desertification, Vegetation change, Mann-Kendall rank statistic, SPOT VEGETATION