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An analysis of the fog distribution in Beijing for the 2001-2005 period using NOAA and FY data

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Based on the various fog remote sensing information products abstracted from the polar orbit meteorological satellite data (NOAA and FY), this paper analyses the characteristics of the frequency and distribution that dense fogs have taken place in the Beijing district from 2001 to 2005. Among those information products, the statistical graph of the foggy days in Beijing from 2001 to 2005 by means of satellite-remote-sensing reflects the frequency that dense fog has occurred in the different regions in Beijing; and the statistical graph of the foggy days of each season by satellite-remote-sensing shows the characteristics of the temporal and spatial change of the fog distribution in the Beijing in different seasons; the fog degree index(like pixel-level spatial measurement) by satellite-remote-sensing reflects the fog frequency difference on unit area in different counties of Beijing. Meanwhile, based on the satellite-remote-sensing pictures, data on the main meteorological elements that contribute to the formation of fog, geographic information, and DEM data, this paper makes an analysis in 3 areas, the traits of the fog distribution in the different regions of Beijing in different seasons; meteorological causes for temporal and spatial changes the main fog types(advection fog, radiation fog). This paper also gave a brief introduction to the general principles of meteorological satellite remote sensing fog, fog information extraction method, as well as the process of satellite orbit selecting according to the ground visibility, data processing and product generation.