

东北冷涡积层混合云系形成条件的个例分析

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A case study on conditions forming stratiform mixed-phase clouds in northeast cold vortex

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摘要 利用2003年7月7—8日NCEP/NCAR资料和地面高空常规探测资料, 利用客观分析的方法, 研究了东北冷涡积层混合云系形成的环境条件。结果表明: 这一冷涡天气系统是由北部和南部两个低压系统组成, 而且均比较深厚, 有明显低温区配合。东北地区的降水主要受南部的低压系统影响。该系统有气旋性环流配合, 在气旋中心区、气流辐合区和气旋东南侧西南气流中均存在相对湿度高于80%的湿度区。湿度区中含有湿度高于90%的区域, 积层混合云系产生在这个区域内, 而且降水区与系统的不稳定区和动力场辐合区配合一致。研究表明, 东北冷涡天气系统中积层混合云系是在冷涡系统东南部的西南气流中形成的, 水汽输送条件较好, 而且有高湿不稳定区配合, 对研究其生成和发展有指示意义。

关键词: [东北冷涡](#) [积层混合云](#) [天气形势](#) [天气学分析](#)

Abstract: Based on reanalysis data from NCEP/NCAR center on July 7-8, 2003 and the sounding data from ground and deep space, the conditions forming stratiform mixed-phase clouds in northeast cold vortex were analyzed. The results indicate that cold vortex weather consists of two low pressure systems in the north and south of northeast China. Both are deep and are accompanied with obvious low temperature zones. Precipitation in northeast China is mainly influenced by the south low pressure system. This system has cyclone circulation, and there exists humidity areas (relative humidity is more than 80%) in the center of cyclone, in the convergence area of airflow and in the southwest airflow of the southeast side of cyclone. Stratiform mixed-phase clouds could be formed in humidity area that relative humidity is more than 90%. Precipitation area is coincident with system' instable area and energy convergence area. It suggests that stratiform mixed-phase clouds in northeast cold vortex are formed in the southwest airflow of the southeast cold vortex, in where transport conditions of water vapor are good, and it has high and humid instable areas. The above mentioned has the indicative significance to formation and development of mixed-phase clouds.

Keywords:

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