

激光雷达专辑

云底高度的激光云高仪、红外测云仪以及云雷达观测比对分析

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摘要:

为了比较几种自动化测云仪器的性能, 中国气象局气象探测中心在南京信息工程大学的气象探测基地首次组织了一次为期近5个月的比对试验, 试验仪器包括四台激光云高仪、两部红外测云仪、一台全天空成像仪以及一部毫米波云雷达。对其中大部分仪器取得的三个月云底高度数据进行了初步的分析, 结果表明: 三台激光云高仪测量结果比较一致; 两部红外测云仪在测量低云时一致性稍差; 云雷达与激光云高仪测量的最低层云底高度数据一致性较差, 但与红外测云仪的测量结果匹配较好。

关键词: 大气光学 云底高 激光云高仪 红外测云仪 云雷达

Comparison and analysis of cloud base height measured by ceilometer, Infrared cloud measuring system, and cloud radar

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Abstract:

To compare the consistency of cloud base heights measured by some instruments, the Meteorological Observation Center of China Meteorological Administration firstly organized a nearly 5-month campaign employing 4 ceilometers, 2 Infrared cloud measuring systems, a Total-Sky-Imager, and one cloud radar. The campaign was done at the observation field within the campus of Nanjing University of Information Sciences & Technology. Preliminary analysis of 3-month cloud base heights obtained from most of above instruments shows that a) the data among 3 ceilometers are comparatively consistent, b) the consistency between the two Infrared cloud measuring systems is slightly worse than that from ceilometers, c) the consistency of observed cloud base height of the first cloud layer between cloud radar and ceilometers is comparatively low, but is much better than that between cloud radar and Infrared cloud measuring system.

Keywords: atmospheric optics cloud base height ceilometer Infrared cloud measuring system cloud radar

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