大气成分观测与服务中心的主要进展

在大气化学实验室以及大气本底、酸雨和沙尘暴等观测站网长期工作基础上，作为“大气成分轨道”的主要牵头实施单位，大气成分观测与服务中心积极按照中国气象局业务技术体制改革总体方案精神，按照“立足现有、统筹规划、重点突出、分步建设”基本思路，设计建设大气成分研究型业务体系，保证了各项科研、业务和服务工作的顺利开展。目前初步形成了12个研究和业务团队：气溶胶、温室气体及相关微量成分、反应性气体与大气光化学、臭氧与辐射、酸雨、边界层、数值同化、大气成分数值模拟、化学输送数值模拟、大气成分气候效应、大气成分反转数值模拟、常规预报要素分析。2005年在研和新获准的各类国家级和省部级科研项目达30多项。对原有的观测站网和大气化学实验室进行升级改造、增容及整合，重新布设了基本覆盖全国范围的30个大气成分观测站。按照国家科技基础条件平台发展规划，牵头实施“国家大气成分本底观测研究台站体系建设”。中国气象局4个大气本底站(青海瓦里关、北京上甸子、浙江临安、黑龙江龙凤山)正式进入国家级野外观测研究台站行列；完成了2个拟新建本底站(云南香格里拉、新疆阿克达拉)论证试验和可行性研究报告，初步确定了湖北金沙预选本底站站址，即将启动科学论证工作；开展“酸雨观测业务规范”人员培训，大力推进酸雨工作业务化。领衔“国际沙尘暴发展研究计划”，沙尘暴形成机制及数值预报研究和服务工作取得了重大进展，入选“十五”国家科技重大成果展，并为我国神舟六号的发射提供了决策服务；初步建成我国化学天气预报模式和模块的研究－开发－运行公共平台和预报会商系统，几种大气成分浓度的区域数值预报已投入试运行。积极组织参加世界气象组织－全球大气观测的各种国际比对和人员培训。过去1年来，在中国气象局的高度重视和积极组织下，牵头开展并不断推进我国大气成分网络化观测、研究与服务，取得了突出成绩，已成为中国气象局对外开放与交流的重要窗口之一。

大气成分观测与服务中心：周凌晞

Advances in Center for Atmosphere Watch and Service

Based on the Laboratory for Atmospheric Chemistry and the networks of atmospheric background, acid rain, and dust storm observation stations, as one of the main operational emphases of the China Meteorological Administration (CMA), the Center for Atmosphere Watch and Service (CAWAS) designs and establishes its operating system according to CMA's overall structural reform scheme. So far, the center has 12 research/operational groups: Aerosol, Greenhouse Gases & Related Tracers, Reactive Gases & Atmospheric Photochemistry, Total Ozone and Radiation, Atmospheric Deposition, Boundary-Layer Meteorology, Numerical Assimilation, Atmospheric Composition Modeling, Chemical Transport Modeling, Atmospheric Composition & Climate Change, Atmospheric Composition Inverse Modeling, and Forecasting Analysis. The main advances in 2005 are as follows: There were over 30 national or provincal-level scientific projects going on in the center. The upgrading, renovation, capacity-increasing, and integration of the original observation station network and the Laboratory for Atmospheric Chemistry were carried out, and the atmospheric composition observation network of 30 stations across China was redistributed. According to the national infrastructure platform development program, the center is leading the implementation of the construction of the national atmospheric composition background observation and research station system. CMA's four background stations (Mt. Wa Liguan GAW/WMO baseline observatory in Qinghai Province, atmospheric background stations at Lin'an in Zhejiang Province, Shangdianzi in Beijing and Longfengshan in Heilongjiang Province) formally entered the national-level field observation and research station network. The scientific assessing experiments and the feasibility reports of two new regional background stations in Xinjiang Akedala and Yunnan Shangerila were completed, and the site of another regional background station (Jinsa of Hubei Province) was determined preliminarily. The personnel training in the operating criteria for acid rain observation was conducted and the operationalization of acid rain observation is going on. The center is taking charge of the project “International Development and Research Program of Dust Storms,” and the researches on the formation mechanisms and numerical prediction of dust storms made great progress, being selected as one of the national major scientific achievements in the 10th five-year plan, based on which the center provided successfully the meteorological support for the launching of the spacecraft Shenzhou 6. The researching-developing-running platform of China's chemical numerical prediction models/modules and the forecasting consultation system were established preliminarily. Several regional atmospheric composition numerical prediction systems have been put to trial operation. We also took part in the international inter-comparison programs and personnel training organized by WMO-GAW. In 2005, the center made great advances in atmospheric composition networking observation, research, and service.

Center for Atmosphere Watch and Service: Zhou Lingxi