A Study on modification of Aircraft Platform for Air Quality Measurement in Korea

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The aircraft measurement for air quality is able to fly in three dimensions within the planetary boundary layer of inland and sea. In this study, the Beechcraft B1900D was modified to build a unique aircraft measurement platform for the measurement of particulate matter and gas. This aircraft has a maximum takeoff weight of 7,765kg and this aircraft is loaded with various air quality measurement equipment. The contents of aircraft modification are as follows. The installed contents for air quality measurement are aircraft aerosol inlets, trace gas inlets, discharge tubes, AIMMS-30, and pylon adapter. The power supply of the measurement equipment replaced the generating capacity of starter generators from 300A to 400A (at DC 28V). In addition, this aircraft was installed on the time synchronization and network system of measurement equipment (HR-ToF-AMS, PTR-ToF-MS, CIMS, etc). Currently, the air quality scientists in Korea have been investigating on long-range transport or local large point sources.