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INTERCOMPARISON OF NO_y MEASUREMENT TECHNIQUES

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An informal intercomparison of NO_y measurement techniques was conducted during the summer 1994 at a site near Nashville, TN. Five groups were involved: NOAA/Aeronomy Laboratory, Brookhaven National Labortory, Tennessee Valley Authority, Georgia Institute of Technology, and Environmental Science and Engineering. The NO_y methods used either the Au-catalyzed conversion of NO_y to NO in the presence of CO or H_2 or the reduction of NO_y to NO on a heated molybdenum oxide surface.

The following conclusions have been reached: 1) Even with influence of a wide range of compounds from anthropogenic sources, none of the instruments showed evidence of serious loss of conversion efficiency; 2) The levels of NO_y recorded were large and highly variable, ranging from 2 ppbv tgo 100 ppbv, and most of the NO_y was NO_x from nearby sources; 3) Because most of the NO_y was NO_x the present intercomparison does not provide a very rigorous test of the ability of the converters to detect compounds such as HNO_3 and organic nitrates which are usually more difficult to convert; and, 4) Results indicate there is no substantial difference in the effectiveness of NO_y conv ersion at these levels of NO_y either using the Au-catalyzed tgechnique or the heated molybdenum technique.

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