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Atmospheric Sciences
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Research Triangle Park NC 27711

Research and Development

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Project Summary

Addendum to PTPLU: A Single Source Gaussian Dispersion Algorithm

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PTPLU (PoinT PLUme dispersion model) was developed by the U.S. Environmental Protection Agency (EPA) in 1982 to function as a screening model for estimating maximum hourly concentrations from single point sources. This addendum describes modifications to PTPLU that have resulted in an update of the FORTRAN source code as contained in UNAMAP (Version 6).

This Project Summary was developed by EPA's Atmospheric Sciences Research Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Summary of Modifications

In 1982, PTPLU was introduced as an improvement over PTMAX. Both models were intended for use as point source screening models in which maximum short-term concentrations were estimated for various meteorological conditions. PTPLU's improvements over PTMAX included wind profile exponents, momentum and buoyancy driven plume rise, and options for calculating buoyancy induced dispersion, stack tip downwash, and gradual plume rise.

This new version of PTPLU, Version 2.0, offers enhancements to the original PTPLU algorithm. In Version 2.0, we offer a choice of either urban or rural dispersion coefficients and wind profile exponents, and an option for selecting default values.

This addendum describes the changes, presents a test case, and shows FORTRAN coding changes that were made in the batch version of PTPLU. Both the interactive and batch versions of PTPLU-2.0 were included in UNAMAP, Version 6, which was released August 1986.

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The complete report, entitled "Addendum to PTPLU A Single Source Gaussian Dispersion Algorithm," (Order No. PB 87-145 363/AS; Cost: $9.95, subject to change) will be available only from:

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650

The EPA Project Officer can be contacted at:

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