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APPENDICES

Appendix A: MM5 Flow Charts

Appendix B: MM5 UNICOS Script

Appendix C: Unit Number Allocations

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Figure 1. Schematic representation of the vertical structure of the model. The example is for 15 vertical layers. Dashed lines denote half- sigma levels, solid lines denote full-sigma levels.

Figure 2. Schematic representation showing the horizontal staggering of the dot (●) and cross (x) grid points. The smaller inner box is a representative mesh staggering for a 3:1 coarse-grid distance to fine-grid distance ratio.

Figure A1. Flow chart of MM5. The expansions of the subroutines appended with an asterisk are shown in Figure A2.

Figure A2. Flow chart for major subroutines CHKNST and NSTLEV1. The expansions of the subroutines appended with an asterisk are shown in Figure A1.

Figure A3. Flow chart for major subroutine SOLVE3. The expansions of the subroutines appended with an asterisk are shown in Figures A1 (for MAPSMP) and A2 (for IN4DGD). The routine appended with a double asterisk calls two subroutines not shown (MAXIMI and MINIMI).

Preface

This technical note describes the Fortran code (version 1) of the PSU/NCAR mesoscale model (MM5). It is intended to provide a detailed documentation of the model code for users who want to understand the code in in great detail or modify it. Version 1 is the first version of MM5 which succeeds a version 8 of MM4. Since the MM5 modeling system is a research tool undergoing constant improvement and modification at both NCAR and the Pennsylvania State University, newer versions of MM5 will continue to be developed. Users who want to know more about the overall MM5 modeling system should obtain a copy of *A User's Guide to the Penn State/NCAR Mesoscale Modeling System*, by D.O. Gill (1992).

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