Theoretical Notes (EMP-2)

These are the Theoretical Notes, EMP-2, Notes 1-368, assembled by Dr. Carl E. Baum.

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TN 1, W. R. Graham and K. D. Granzow, The EMP Fields at the Surface of the Ground and Below the Ground, Dec 64, Air Force Weapons Laboratory, Dikewood Corp.

TN 2, C. E. Baum, Air Conductivity: Some New Developments. 8 Jan 65, Air Force Weapons Laboratory

TN 3, D. D. Babb, Time Dependent Age Theory, Jan 65, Dikewood Corp.

TN 4, (Renumbered as Interaction Note 1)

TN 5, C. E. Baum, Unsaturated Compton Current and Space-Charge Fields in Evacuated Cavities, 20 Jan 65, Air Force Weapons Laboratory

TN 6, C. E. Baum, The Calculation of Conduction Electron Parameters In Ionized Air, 3 Mar 65, Air Force Weapons Laboratory

TN 7, K. D. Granzow, Multipole Theory in the Time Domain. Mar 65. Dikewood Corp.

TN 8, J. S. Malik, EM Pulse Fields in Dissipative Media, 15 Apr 65. Los Alamos Scientific Laboratory

TN 9, C. E. Baum, Electrode Potentials from Compton Current and Space Charge in Evacuated Cavities, 24 May 65, Air Force Weapons Laboratory

TN 10, R. R. Schaefer, Prompt Gamma Effects in the Vicinity of a Ground-Air Interface, 26 May 65, Air Force Weapons Laboratory

TN 11, Lt. R.R. Schaefer, Air Inelastic, Neutron Induced Contributions to Currents and Conductivity, 17 June 65, Air Force Weapons Laboratory

TN 12, C. E. Baum, Electron Thermalization and Mobility in Air. 16Jul 65, Air Force Weapons Laboratory

TN 13, S. B. Batdorf, Surface EMP - An Aspect of Intemal EMP, 13 Oct 65, Aerospace Corp.

TN 14, R. R. Schaefer, Later Time Sources ofEMP, 14 Feb 66, Air Force Weapons Laboratory

TN 15, R. R. Schaefer, Charge Currents and Conductivity Arising from Inelastic and Fast Capture Collisions of Neutrons in the Air Surrounding a Nuclear Detonation, 24 Feb 66, Air Force Weapons Laboratory

TN 16, J. S. Malik, The Compton Current, 5 Nov 65, Los Alamos Scientific Laboratory

TN 17, J. H. Erkkila, Prompt Gamma Ray Fluxes and Energy Deposition in an Exponential Atmosphere, 21 Jun 66, Air Force Weapons Laboratory

TN 18, J. H. Scott, Electrical and Magnetic Properties of Rock and Soil, 26 May 66, U.S. Geological Survey

TN 19, C. E. Baum, A Technique for the Approximate Solution ofEMP Fields from a Surface Burst in the Vicinity of an Air-Ground or an Air-Water Interface, 11 Sep 66, Air Force Weapons Laboratory

TN 20, R. R. Schaefer, Curve Fits to the Electric Current and Ionization Rate Delta Function Responses, 10 Sep 66, Dikewood Corp.

TN 21, W. R. Graham, The Electromagnetic Fields Produced by a General Current Distribution in a Conductive Environment Under Certain Symmetry Conditions, Jan 65, Air Force Weapons Laboratory

IN 22, P. M. Livingston, Spherical Coordinate Expansion of Maxwell's Equations for Computer Solution, II Apr 63, Air Force Weapons Laboratory

TN 23, P. M. Livingston, Conservation Equations for Electromagnetic Energy Density and Momentum Density, 7 May 63, Air Force Weapons Laboratory

TN 24, K. D. Granzow, Transient Spherical Waves, I Dec 66, Dikewood Corp.

TN 25, C. E. Baum, The Reflection of Pulsed Waves from the Surface ofa Conducting Dielectric, 18 Feb 67, Air Force Weapons Laboratory

TN 26, J. H. Erkkila, Calculation of the EMP from High Altitude Nuclear Denotations, 14 Apr 67, Air Force Weapons Laboratory

TN 27, W. J. Karzas and R. Latter, Electromagnetic Radiation from a Nuclear Explosion in Space, Oct 61, RAND, RM2849, AD 412984

TN 28, W. 1. Karzas and R. Latter, The Electromagnetic Signal Due to the Exclusion of the Earth's Magnetic Field by Nuclear Explosions, Dec 61, RAND

TN 29, 31, 33, 34, 38, 39, 41, 43, 45, 48 Not Currently Available

TN 30, W. Sollfrey, Close-In Electromagnetic Fields Produced by Nuclear Explosions, Apr 63, RAND RM 3525, AD 404917

TN 32, W. J. Karzas and R. Latter, Air Conductivity Produced by Nuclear Explosions, May 63, RAND RM3671PR,AD406462

TN 35, W. J. Karzas and R. Latter, Electromagnetic Signals Produced by Low-Altitude Nuclear Explosions, Dec 63, RAND, RM 3884PR, AD 429404

TN 36, V. Gilinsky, The Kompaneets Model for Radio Emission from a Nuclear Explosion, Aug 64, RAND 4134, AD 603709

TN 37, R. E. LeLevier, The Compton Current and the Energy Deposition Rate from Gamma Quanta - A Monte CarloCalculation,Jun 64,RAND,RM-415IPR,AD606028 48

TN 40, W. J. Karzas and R. Latter, Detection of the Electromagnetic Radiation from Nuclear Explosions in Space, Oct 64, RAND, RM-454I, AD 607788

TN 42, W. J. Karzas and R. Latter, Satellite-Based Detection of the Electromagnetic Signal from Low and Intermediate Altitude Nuclear Explosions, Jun 65, RAND, RM-4542, AD 616701

TN 44, W. Sollfrey, Effects of Propagation on the High-Frequency Electromagnetic Radiation from Low-Altitude Nuclear Explosions, Nov 65, RAND, RM-4741, AD 625074

TN 46, G. H. Peebles, Numerical Programs for Solving Hyperbolic Systems by the Method of Characteristics: Radio Emission from a Nuclear Explosion: Part I, Mar 66, RAND, RM-4942, AD 639600

TN 47, V. Gilinsky, The Development of a Radio Signal from a Nuclear Explosion in the Atmosphere, Aug 66, RAND, RM-4988, AD 639600

TN 49, S. V. Yadavalli and G. H. Price, Propagation ofRF Surface Waves Along a Sea-Air Interface, Mar 67, Stanford Research Institute

TN 5O,R. R. Schaefer, Diffusion Approximation Validity Analysis, 8 Dec 67, Gulf General Atomic, Inc.

TN 51, R R. Schaefer, Diffusion Approximation Evaluation of the EMP Fields from a Near-Surface Burst, 8 Dec 67, Gulf General Atomic, Inc.

TN 52, D. D. Babb and K. D. Granzow, Extrapolating Electromagnetic Fields Region, Jun 65, Dikewood Corp., AFWL-TR-64-179, AD 617965 from Values in a Spherical

TN 53, W. Sollfrey, An Analytically Solvable Model for the Electromagnetic Fields Produced by Nuclear Explosions, Ju163, RAND, RM-3744, AD 419936

TN 54, J. R Johler, Electromagnetic Pulse Propagation in the Nonnal Terrestrial Waveguide Environment, Dec 66, ESSA, IER-21, AD 648001

TN 55, J. R. Johler, Electromagnetic Pulse Propagation in a Disturbed Terrestrial Waveguide, Dec 66, ESSA

TN 56 58, 59, 60, 61 , Not Currently Available

TN 57, L. L. Doran and K. D. Granzow, Extrapolating Transient Multipole Fields, 11Oct 68, Dikewood Corp.

TN 62, R. L. Knight, Numerical Solutions of Maxwell's Equations with Azimuthal Symmetry in Prolate Spheroidal Coordinates, Ju169, Dikewood Corp.

TN 63, C. R. Hale, Radial Current and Dose Rate from Neutron Induced Gamma Quanta in Uniform Air by Means of the Stationary Source Approximation, 3 Ju169, Air Force Weapons Laboratory

TN 64, R. R. Schaefer, An Electron Dynamics Scheme for Close-In Self Consistent EMP Applications, 15 Aug 69, Air Force Weapons Laboratory

TN 65, C. R. Hale, An Improved Shell Model for Computing Neutron-Induced Gamma Dose Rate and Radial Charge Current from a Nuclear Air Burst, 25 Aug 69, Air Force Weapons Laboratory

TN 66, V. W. Pine, Prompt Gamma Effects in a Homogeneous Atmosphere, 6 Oct 69, Air Force Weapons Laboratory

TN 67, W. R. Graham and W. J. Karzas, Electromagnetic Propagation Along Stratified Media, Jan 69, RAND, RM-5906, AD 684529

TN 68, 69, 70, 71, 72, 73, 74, 76, 78, 81, 83, 84, 85, 87, 89, 91 Not Currently Available

TN 75, H. J. Longley and C. L. Longmire, Development and Testing ofLEMP, Laboratory 8 Dec 69, Los Alamos Scientific

TN 77, H. J. Longley, Compton Current in Presence of Fields for LEMP, 5 Jan 70, Los Alamos Scientific Laboratory

TN 79, C. N. Vittitoe, Models for Electromagnetic Pulse Production from Underground Nuclear Explosions, Part I: Metallic Casing Effects, Apr 70, Sandia Corp.

TN 80, J. McRary, The Amplitude Distribution of an Electromagnetic Pulse Propagated Through the Ionosphere, Jun 70, Pan American Corp.

TN 82, W. R. Eberle, The Effects of Water Content and Water Resistivity on the Dispersion of Resistivity and Dielectric Constant in Quartz Sand in the Frequency Range..., Aug 70, U.S. Geological Survey

TN 86, B. R. Suydam, Electromagnetic Signal from a Bomb Burst in Vacuo, Aug 59, Los Alamos Scientific Laboratory

TN 88, B. R. Suydam, Computations on the Parameter Values Inside of the E. M. Source, 6 Apr 61, Los Alamos Scientific Laboratory

TN 90, 1. Karl Theobald, Fast Electromagnetic Signals Produced by Nuclear Explosions in the Troposphere, Nov 62, Los Alamos Scientific Laboratory, LA-2808

TN 92, B. R. Suydam, The Field of a Magnetic Bubble, 26 Nov 62. Los Alamos Scientific Laboratory, LAMS-2807

TN 93 – thru TN101 , Not Currently Available

TN 102, B. R. Suydam, Theory of the Radio Flash, Part VI, High Frequency Signal from a Ground Burst, 25 Apr 66, Los Alamos Scientific Laboratory, LA-3532-MS

TN 103, B. R. Suydam, Theory of the Radio Flash, Part VII, Finite Ground Conductivity, 23 Joo 66, Los Alamos Scientific Laboratory, LA-3571-MS

TN 104, E. D. Cashwell, Conrad L. Longmire, and 1.R. Neergaard, The Scattering of Gamma Rays in an Exponential Atmosphere, Apr 68, Los Alamos Scientific Laboratory, LA-3944

TN 105, Not Currently Available

TN 106, B. R. Suydam, Early Radio Flash from a Low-Altitude Air Burst, Aug 69, Los Alamos Scientific Laboratory, LA-4245-MS

TN 107, B. R. Suydam, Radio Flash Arising from Differential Scattering, Aug 69, Los Alamos Scientific Laboratory, LA-4253-MS

TN 108, Not Currently Available

TN 109, R. W. P. King and C. W. Harrison, Jr., The Transmission of Electromagnetic Waves and Pulses into the Earth, Aug 68, Sandia Corp., SC-R-68-1814

TN 110, H. J. Longley and C. L. Longmire, Development of the GLANC EMP Code, Jan 71, Los Alamos Nuclear Corp., LANC-R-7

TN 111, Not Currently Available

TN 112, Not Currently Available

TN 113, C. L. Longmire and H. J. Longley, Time Domain Treatment of Media with Frequency-Dependent Electrical Parameters, 12 Mar 71, Mission Research Corp., MRC-N-l, AD 770158

TN 114, Not Currently Available

TN 115, C. R. Hale, Electric Fields Produced by an Electronic Current Emitted Perpendicular to a Surface, Apr 71, Air Force Weapons Laboratory

TN 116, M. A. Messier, The Effect of Electron Cascading on the Electromagnetic Pulse Generated by a High Altitude Burst, 1Mar 71, Air Force Weapons Laboratory

TN 117, M. A. Messier, A Standard Ionosphere for the Study of Electromagnetic Pulse Propagation, 1Mar 71, Air Force Weapons Laboratory

TN 118, M. O. Cohen and R. D. Schamberger, Energy Deposition Rates and Radial and Polar Compton Currents from Gamma-Ray and Neutron Sources in the Intermediate Altitude Range, Jun 68, United Nuclear Corp., AFWLTR-68-13, AD 836488

TN 119, 120,121 Not Currently Available

TN 122, T. M. Flanagan and R. A. Cesena, Radiation-Induced Conductivity in Missile Site Materials, Final Report on Task 5-4,7 May 71, Gulf Radiation Technology, Gulf-RT-I0642

TN 123, Not Currently Available

TN 124, C. L. Longmire, External System Generated EMP on Some Types of Satellite Structure, 24 Aug 71, Mission Research Corp.

TN 125, W. A. Radasky and R. L. Knight, HAPS -- A Two-Dimensional High Altitude EMP Environment Code, Nov 71, Air Force Weapons Laboratory, Dikewood Corp., AD A013972

TN 126, R. D. Richtmyer, Stability of the New Radio Flash Code, Aug 67, Los Alamos Scientific Laboratory, LA-3864-MS

TN 127, R. D. Jones, On Quasi-Monochromatic Signals Propagated Through Dispersive Channels, Jul 71, Sandia Corp., SC-TM-70-516

TN 128, C. L. Longmire and H. J. Longley, Improvements in the Treatment of Compton Current and Air Conductivity in EMP Problems, 22 Oct 71, Mission Research Corp., MRC-N-2

TN 129 thru 160 , Not Currently Available

TN 161, G. R. Knutson, The Effect of Nuclear-Coulomb Electron Scattering on High Altitude EMP Sources, 23 Feb 72, Air Force Weapons Laboratory

TN 162, L. J. Williams, Potential Induced on a Sphere Due to Transient Radiation, 15 Jan 72, Air Force Weapons Laboratory

TN 163, M. A. Messier, The Ionospherically Propagated Exoatmospheric EMP Environment, 25 Jan 72, Air Force Weapons Laboratory

TN 164, 165, 166, 167 Not Currently Available

TN 168, D. L. Mangan and G. J. Scrivner, Field Generation within a Lossy Dielectric Cylinder Excited by a Radiation Pulse, Feb 72, Sandia Corp., SC-RR-710870

TN 169, Not Currently Available

TN 170, C. N. Vittitoe, Models for Electromagnetic Pulse Production from Underground Nuclear Explosions, Part IV: Models for Two Nevada Soils, May 72, Sandia Corp. SC-RR-72 0173

TN 171, T. F. Ezell, An Electromagnetic Boundary Value Problem in an Inhomogeneous Medium, May 72, University of New Mexico, 59

TN 172, Not Currently Available

TN 173, G. J. Scrivner and D. L. Mangan, On the Adequacy of a Straightforward Perturbation Expansion for Estimating the Electromagnetic Response within a Lossy Dielectric Cylinder Excited by a Radiation Pulse, Joo 72, Sandia Corp., SC-RR-72 0165

TN 174, R. D. Jones and D. Z. Ring, Ionospheric Modification of the Electromagnetic Pulse from Nuclear Explosions, Jul 72, Sandia Corp., SC-RR-72 0400

TN 175, G. R. Knutson, Preliminary Curve-Fit Representations for Gamma Induced Air-Over-Ground EMP Sources, 12 Dec 72, Air Force Weapons Laboratory

TN 176, K. S. H. Lee, Cable Response to System-Generated EMP. Apr 73. Dikewood Corp.

TN 177, D. Arnush, Electromagnetic Pulse (EMP) Propagation Through an Absorptive and Dispersive Medium, 30 Jun 71, TRW Systems Group

TN 178, D. F. Higgins, X-Ray Induced Photoelectric Currents. Jun 73. Mission Research Corp.

TN 179, K. S. H. Lee and L. Marin, Interaction of External System-Generated EMP with Space Systems, Aug 73, Dikewood Corp., 60

TN 180, R. C. Bigelow and W. R. Eberle, Empirical Predictive Curves for Resistivity and Dielectric Constant of Earth Materials: 100 Hz to 100 MHz, 1972, Geological Survey, SP-30

TN 181, D. F. Higgins, C. L. Longmire, and A. A. O'Dell, A Method for Estimating the X-Ray Produced Electromagnetic Pulse Observed in the Source Region of a High-Altitude Burst, 29 Nov 73, Mission Research Corp., MRC-R-54, DNA 3218T, AD 774152

TN 182, W. T. Wyatt, Jr., Computed Electron Drift Velocity in Moist Air, Mar 67, R & D Laboratories, Rpt 1890, AERDL-1890, AD 651270

TN 183, L. D. Buxton, The Electron Transport Computer Code Zebra 1,Jun 71, Harry Diamond Laboratories, HDL-TR-1536, AD 728144

TN 184, A. D. Varvatsis and M. I. Sancer, Interaction ofa Hollow Metallic Sphere Having a Circular Aperture with an Electron Moving in an Arbitrary Trajectory Exterior to the Sphere, Jul 74, Tetra Tech, Inc., AD A020369

TN 185 thru 189 , Not Currently Available

TN 190, G. H. Canavan, 1. E. Brau, and L. A. Wittwer, Sensitivity of Self-Consistent High-Altitude Electromagnetic Pulse Calculations to Pre-ionization and Improved Source and Ionization Models, Oct 73, Air Force Weapons Laboratory, AD 781051, AFWL-TR-74-48

TN 191, L. A. Wittwer, 1. E. Brau, and G. H. Canavan, Effects of Nuclear Scattering and Energy Loss on Small Signal High-Altitude Electromagnetic Pulse Calculations, Jan 74, Air Force Weapons Laboratory, AFWL-TR-74-46, AD 780588

TN 192, K. C. Chen and J. Martinez, EMP Propagation in the Ionosphere, Ju174, Air Force Weapons Laboratory and Dikewood Corp.

TN 193, C. N. Vittitoe, Electron Attachment and Avalanching Associated with EMP Calculations for High-Altitude Bursts, May 73, Sandia Laboratories, SLA-73-0494

TN 194, C. N. Vittitoe, Calculation of Spectra from EMP-Type Waveforms, Mar 73, Sandia Laboratories, SLA-73-0338

TN 195, F. B. Brumley, D. C. Evans, and D. L. Mangan, On the Radiation-Produced Electromagnetic Response of a Dielectric-Filled Cylindrical Cavity: A Comparison of Theory and Experiment, Dec 73, Sandia Laboratories, SLA-73-0615

TN 196, T. A. Dellin and C. J. MacCallum, QUICKE2: A One-Dimensional Code for Calculating Bulk and Vacuum Emitted Photo-Compton Currents, Apr 74, Sandia Laboratories, SLL-74-0218

TN 197, J. E. Brau, G. H. Canavan, L. A. Wittwer, and A. E. Greene, Propagated EMP from Tangent and Buried Bursts, Nov 73, Air Force Weapons Laboratory, AD 783246, AFWL- TR-74-47

TN 198, J. E. Brau, G. H. Canavan, and L. A. Wittwer, CHEMP: A Code for Calculation of High-Altitude EMP, Mar 74, AFWL-TR-74-49, AD 783239

TN 199, K. S. H. Lee and L. Marin, SGEMP for Resonant Structures, Sep 74, Dikewood Corp.

TN 200, T. C. Salvi, Time Dependent Internal EMP for Spherical and Cylindrical Symmetry, Oct 74, Air Force Weapons Laboratory; Mac 74 AD 775708, AD B008506

TN 201, C. L. Longmire, Note on Equivalent Circuits for Conducting Sphere, 30 Sep 74, Mission Research Corp.

TN 202, C. L. Longmire and D. F. Higgins, Scaling ofSGEMP Phenomena, 28 Oct 74, Mission Research Corp.

TN 203, R. W. Latham, Currents Induced on an Impedance within a Slotted Sphere, Sep 74, Tetra Tech, Inc.

TN 204, J. F. Morgan and G. R. Knutson, The Treatment of Electron Scattering and Approximate Methods Used for Specifying High-Altitude EMP Sources, Sep 73, Air Force Weapons Laboratory

TN 205, J. Peter Vajk, A Monte Carlo Treatment of Secondary Electrons in High Altitude EMP Calculations, Aug 74, Lawrence Livermore Laboratory

TN 206, L. Marin, K. S. H. Lee, and T. K. Liu, Analytical Calculations on Photo-Electron-Induced Currents on a Model of the FLTSATCOM Satellite, Feb 75, Dikewood Corp., AFWL-TR-75-147, AD 026591

TN 207, C. T. Case, Transient Reflection and Transmission ofa Plane Wave Normally Incident Upon a Semi-Infmite Anisotropic Plasma, Jul 64, Air Force Cambridge Research Laboratories, AFCRL-64-550, AD 606559

TN 208, C. T. Case, On Transient Wave Propagation in a Plasma, Sep 65, Air Force Cambridge Research Laboratories, AFRCL-65-702, AD 625133

TN 209, R. E. Haskell and C. T. Case, Transient Signal Propagation in Lossless, Isotropic Plasmas, Volume I, Apr 66, Air Force Cambridge Research Laboratories, AFCRL-66-234,AD 634083

TN 210, R. E. Haskell and C. T. Case, Transient Signal Propagation in Lossless, Isotropic Plasmas, Volume II, Jun 66, Air Force Cambridge Research Laboratories, AFCRL-66-234(II), AD 638803

TN 211, C. T. Case and R. E. Haskell, Transient Reflected Signals from an Anistropic Plasma, Jan 67, Air Force Cambridge Research Laboratories, AFCRL-67-0065, AD 649871

TN 212, R. L. Fante, Theory of Propagation of Electromagnetic Waves in Space-Time Varying Media, 24 Apr 72, Air Force Cambridge Research Laboratories, AFCRL-72-0264, AD 746676

TN 213, R. L. Fante and R. L. Taylor, Transient Signal Propagation in Lossy Plasmas, 25 Apr 73, Air Force Cambridge Research Laboratories, AFCRL-TR-73-0277,AD 764721

TN 214, R. R. Schaefer, Estimation of Time Dependent Electron Transport Parameters Based Upon Time Independent Energy Deposition and Electron Transmission Profiles, Oct 71, R & D Associates, RDA-TR-021-DNA

TN 215, R. R. Schaefer, A Simple Model of Soft X-Ray Photoemission, Nov 71, R & D Associates, RDA-TR-036-DNA, AD 744992

TN 216, C. T. C. Mo, Analysis of the Response of a Conductor Immersed in an EMP Source Region-The Steady State, 24 Jan 75, R & D Associates, RDA-TR-2301-009, DNA 3455T, AD A008368

TN 217, C. T. C. Mo, EMP Generation Near Objects with Cylindrical Symmetry in the Source Region, Aug 74, R & D Associates, RDA-TR-5900-002, DNA 3602T, AD A016260 63

TN 218, D. A. Sargis, E. R. Parkinson, J. N. Wood, R. E. Dietz, and C. A. Stevens, Late-Time Sources for Close-In EMP, Aug 72, Science Applications, Inc., SAI-72-556-LJ, DNA 3064F, AD 763489

TN 219, L. W. Miller, The Electromagnetic Pulse from an Underground Nuclear Explosion, Jan 73, Los Alamos Scientific Laboratory, LA-5056

TN 220, D. C. Osborn and A. R. Wilson, Research on Internal Electromagnetic Pulse Phenomena, 2 Oct 73, Systems, Science and Software, Inc., SSS-R-72-1424, DNA 3094F, AD 770613

TN 221, 122 Not Currently Available

TN 223, M. A. Messier, The Effect of Ground Reflection on Observed EMP Waveforms, II Sep 74, Mission Research Corp., MRC-R-78, DNA 3370T, AD A004677

TN 224, 225, 226 Not Currently Available

TN 227, R. Stettner, Low Fluence Calculation of Photoelectron Flux Densities Outside an Emitting Sphere, 13 Dec 74, Mission Research Corp., MRC-N-IIO, DNA 3411T, AD 005825

TN 228, D. E. Merewether and W. A. Radasky, Nonlinear Electromagnetic Fields within a Cylindrical Cavity Excited by Ionizing Radiation, Feb 73, Mission Research Corp., AMRC-N-4

TN 229, D. E. Merewether and T. F. Ezell, The Interaction of Cylindrical Posts and Radiation Induced Electric Field Pulses in Ionized Media, Sep 73, Mission Research Corp., AMRC-R-15

TN 230, Not Currently Available

TN 231, B. K, Singaraju and C. E. Baum, SGEMP Coupling Through a General Aperture, lun 75, Air Force Weapons Laboratory

TN 232, G. H. Price, Sub-Surface HEMP Field Calculations, 1May 75, Stanford Research Institute

TN 233, 124 Not Currently Available

TN 235, T. A. Dellin and C. J. MacCallum, A Handbook of Photo-Compton Current Data, Dee 72, Sandia Laboratories, SCL-RR-720086

TN 236, 1.A. Halbleib, Sr. and W. H. Vandevender, TIGER: A One-Dimensional, Multi-layer ElectronlPhoton Monte Carlo Transport Code, Mar 74, Sandia Laboratories, SLA-73-1026

TN 237, C. N. Vittitoe, Expansion Method for Calculating Dispersion of Electromagnetic Pulses Propagating in the Ionosphere,Jun 74, SandiaLaboratories,SLA-74-0191.

TN 238, Not Currently Available

TN 239, Not Currently Available

TN 240, 1. P. Roberts and J. S. Wicklund, Transient Ionization Effects from Neutron-Secondary Gamma Radiation in the Upper Atmosphere, Oct 75, Harry Diamond Laboratories, HDL-TR-1727, AD A020288

TN 241, 1. P. Roberts and 1. S. Wicklund, Transient Ionization Effects fTomPrimary Gamma Fission Radiation in the Upper Atmosphere, Oct 75, Harry Diamond Laboratories, HDL-TR-I725, AD A020812

TN 242, H. Weil, Formation of a Non-uniform Conducting Region Near an Air-Solid Boundary During Irradiation by a Pulse of High Energy Electrons, Jan 76, Harry Diamond Laboratories, HDL-TR-1735, AD A0260 16

TN 243, Not Currently Available

TN 244, R. L. Knight, E. R. Parkinson, and V. W. Pine, Electromagnetic Pulse Environment Studies, 28 May 74, Science Applications, Inc., SAI-74-502-A2-AQ, AD 780939

TN 245, R. R. Johnston, Non-Equilibrium Conductivity of Air Induced by Ionizing Radiation, 30 Nov 74, Science Applications, Inc., SAI-072-626-PA, AD A001765

TN 246, Not Currently Available

TN 247, C. L. Longmire and K. S. Smith, A Universal Impedance for Soils. Oct 75, Mission Research Corp., MRCN-214, DNA-3788T, AD A025759

TN 248, W. A. Radasky, An Examination of the Adequacy of the Three-Species Air Chemistry Treatment for the Prediction of Surface-Burst EMP, Dec 75, Mission Research Corp., MRC-R-244, DNA-3880T, AD A025280

TN 249, S. J. Dalich and K. D. Granzow, Electromagnetic Pulse Environment Studies, Volume I, Two-Dimensional Ground-Burst Electromagnetic Pulse Calculational Methods, Jun 74, Science Applications, Inc. and Dikewood Corp., SAI-73-514-AQ, AFWL-TR-73-286, Vol. I, AD 783623

TN 250, J. A. Marks and V. W. Pine, Electromagnetic Pulse Environment Studies, Volume II, Late-Time, High-Altitude Electromagnetic Pulse Code Development, Jun 74, Science Applications, Inc., SAI-73-514-AQ, AFWLTR-73-286, Vol. II, AD A000944

TN 251, 252, 253, 254 Not Currently Available

TN 255, B. H. Fishbine, S. J. Dalich, and J. N. Wood, Self-Consistency and Radiation Enhanced Ground Conductivity in the Surface Burst Code SCX, Nov 75, Science Applications, Inc., SAI-74-505-AQ, AFWL-TR-74-338, AD A022260

TN 256,257, 258 Not Currently Available

TN 259, R. N. Carlile, Experimental Validation of Transient Plasma Effects Used in High Altitude Electromagnetic Pulse Calculations, Jun 76, University of Arizona, AFWL-TR-75-276, AD A028516

TN 260 thru 266 , Not Currently Available

TN 267, G. G. Comisar, Space Charge Limiting from Blackbody Radiation, 14May 74, Aerospace Corp., TR- 0074(4124)-3, SAMSO-TR-74-118, AD 779680

TN 268, M. J. Bernstein and K. W. Paschen, Forward and Backward Photoemission Yields from Metals at Various X-Ray Angles ofIncidence, 16 Dec 75, Aerospace Corp., TR-0076(6250-30)-I, SAMSO-TR-75-295, AD A019135

TN 269, M. J. Bernstein and K. W. Paschen, X-Ray Photoemission from Coated Surfaces, 19 Dec 75, Aerospace Corp. TR-0076(6124)-2, SAMSO-TR-75-302, AD A020161

TN 270, Not Currently Available

TN 271, D. F. Higgins, R. Marks, and M. A. Messier, Quasi-Static System-Generated EMP Electromagnetic Pulse Code for Satellite Analysis, Volume II -- Appendixes I Through 3, May 76, Mission Research Corp., 8111-070, AFWL-TR-75-141, Vol. II, AD A026474 70

TN 272, E. P. Wenaas and R. E. Leadon, Cable Response Solution Techniques for the System-Generated Electromagnetic Pulse Environment; Volume I --Methodology and Development of a System Generated Electromagnetic Pulse Cable Code, May 76, Intelcom Rad Tech, INTEL-RT-1H11-078, AFWL-TR-75-174,

TN 273, M. Wilson and P. Trybus, Cable Response Solution Techniques for the System-Generated Electromagnetic Pulse Environment; Volume 2 - PreliminaryEstimateof PhotonExcitationof Multi-ConductorCables, May76, Mission Research Corp., INTEL-RT-8111-078, AFWL-TR-75-174, Vol. 2, AD A026897

TN 274, B. Goplen, O. Lopez, R. E. Clark, J. E. Morel, and W. A. Seidler, A Three-Dimensional Systems Generated Electromagnetic Pulse Calculation of an Idealized FLTSATCOM Satellite, Jun 76, Science Applications, Inc., SAI-75-512-AO, AFWL-TR-75-26I , AD A026898

TN 275, A. Wilson, Theoretical Studies of SGEMP Field Generation, Dec 74, Systems, Science and Software, SSSR-75-2469, DNA 3654F, AD A026334

TN 276, R. Stettner and D. F. Higgins, X-Ray Induced Currents on the Surface ofa Metallic Sphere, 16 Apr 75, Mission Research Corp.,MRC-N-lll, DNA 3612T, AD A012654

TN 277, D. F. Higginsand C. L. Longmire, Highly Space Charge Limited SGEMP Calculations, Jun 75, Mission Research Corp., MRC-R-190, DNA 3885T, AD A027860

TN 278, R. Stettner, On the Calculation of the Effects of Holes and Slots on SGEMP, Oct 75, Mission Research Corp., MRC-R-:221,DNA 3906T, AD A028583 71

TN 279, D. F. Higgins, A Simple Model for Estimating SGEMP Replacement Currents and Evaluating SGEMP Simulation Difficulties, Feb 76, Mission Research Corp., MRC-R-239, DNA 3855T, AD A028759

TN 280, N. J. Carron, Characteristic Steady-State Electron Emission Properties for Parametric Blackbody X-Ray Spectra on Several Materials, Feb 76, Mission Research Corp., MRC-N~221,DNA 3931T, AD A027958

TN 281, N. J. Carron and C. L. Longmire, On the Structure of the Steady State Space-Charge-Limited Boundary Layer in One Dimension, Nov 75, Mission Research Corp., MRC-R-240, DNA 3928T, AD A028294

TN 282, R. Stettner, Time Dependent, Analytic, Electromagnetic Solution for a Highly Conducting Sphere, Mar 76, Mission Research Corp., MRC-R-258, DNA 3910T, AD A028636

TN 283, 264 Not Currently Available

TN 285, C. E. Baum, Some Considerations Concerning Analytic EMP Criteria Waveforms, 29 Oct 76, Air Force Weapons Laboratory

TN 286, D. F. Higgins, Analytic Calculations of the Electromagnetic Fields from a Highly Space-Charge-Limited SGEMP Boundary Layer, Aug 76, Mission Research Corp.

TN 287 thru 292 , Not Currently Available

TN 293, W. J. Karzas and C. T. C. Mo, Magnetic and Electric Contributions to Quasi-Static SGEMP Fields, Jan 78, R & D Associates

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TN 294, H. J. Price and C. L. Longmire, EMP Reflected from a Moving Conductivity Front, Jun 79, Mission Research Corp.

TN 295, W. A. Radasky, An Examination of the Adequacy of the Three-Species Air Chemistry Treatment for the Prediction of Surface-Burst EMP, Dec 75, Mission Research Corp., MRC-R-244, DNA 3880T, AD A025280

TN 296, G. McCartor and C. L. Longmire, Radiation and Hydrodynamic Effects from a Burst in the MX Tunnel, Jan 78, Mission Research Corp., MRC-R-355

TN 297, C. L. Longmire and W. E. Hobbs, Fireball Effects in Late-Time EMP from Surface Bursts, Feb 78, Mission Research Corp., MRC-R-249, DNA 4515T, AD A066604

TN 298, C. L. Longmire, Effect of Multiple Scattering on the Compton Recoil Current, Feb 78, Mission Research Corp., MRC-R-378, DNA 4543T, AD A059914

TN 299, C. L. Longmire, Attenuation of EMP in the Wave Zone Due to Imperfectly Conducting Ground, Jun 78, Mission Research Corp., MRC-R-400, DNA 4634T, AD A063600

TN 300, K. M. Lee, Thin Wire Approximation in 2-D Finite-Difference Calculation ofEMP Response, Aug 78, Mission Research Corp., AMRC-N-96

TN 301, J. Gilbert, E. Pettus, J. Dancz, and W. Hobbs, Analytic Approximations of X-Ray Deposition Region Coupling to Missiles in Flight, Oct 78, Mission Research Corp., AMRC-R-159, AFWL-TR-78-209, AD B040750

TN 302, C. L. Longmire, Note on the EMP from Multiple Low-Altitude Nuclear Bursts, II Oct 78, Mission Research Corp., MRC-N-360

TN 303, J. Lavery and C. L. Longmire, Effects of Terrain on the EMP from Surface Bursts, Feb 79, Mission Research Corp., MRC-R-444

TN 304, J. Dancz, C. L. Longmire, and W. F. Crevier, Effect of Particulates on EMP Calculations, Feb 79, Mission Research Corp., MRC-N-361

TN 305, 306 Not Currently Available

TN 307, J. A. Ball and C. L. Longmire, Early Ground Blow-Off of Nuclear Surface Bursts, 26 Oct 79, Mission Research Corporation, MRC-R-533

TN 308, 309, 310 Not Currently Available

TN 311, K. S. H. Lee, A Note on EMP Propagation Over Imperfectly Conducting Ground, Jun 8.0,Dikewood Corp. (RELATED REPORT- AFWL-TR-81-122, AD B.o62858)

TN 312, I. Smith, Comments on Soil Breakdown, Mar 81, Pulse Sciences, Inc.

TN 313, R. N. Carlile, A Geometrical Instability In A Soil-Filled Coaxial Structure, 17 Apr 81, Air Force Weapons Laboratory

TN 314, K. C. Chen, Soil Breakdown Model for Long Pulse at Moderate Level, 1Apr 81, Air Force Weapons Laboratory

TN 315, C. Mallon, R. Denson, R. E. Leadon, and T. M. Flanagan, Low-Field Electrical Characteristics of Soil; 12 Jan 81, JAYCOR

TN 316, C. Mallon, R. Denson, R. E. Leadon, and T. M. Flanagan, Electrical Breakdown Characteristics of Soil Samples, 12 Jan 81, JAYCOR

TN 317, C. Mallon, R. Denson, R. E. Leadon, and T. M. Flanagan, Coaxial Geometry Experiments, 12 Jan 81, JAYCOR

TN 318, Not Currently Available

TN 319, L. A. Wittwer, High Altitude Conductivity Models for Electromagnetic Pulse Calculations, Apr 75, Air Force Weapons Laboratory, AFWL-TR-74-191, AD AOI0045

TN 320, Not Currently Available

TN 321, J. S. Malik, E. D. Cashwell, and R. G. Schrandt, The Time Dependence of the Compton Current and Energy Deposition from Scattered Gamma Rays, Ju178, Los Alamos Scien~ificLaboratory, LA-7386-MS

TN 322, M. K. Grover and F. R. Gilmore, A Review of Data for Electron Mobility, Energy, and Attachment Relevant to EMP Air Chemistry, 1Mar 80, R & D Associates, RDA-TR-II0002-001, DNA 5457T, AD A098847

TN 323, M. K. Grover, Some Analytical Models for Quasi-Static Source Region EMP: Application to Nuclear Lightning, 1Nov 80, R & D Associates, RDA-TR-113202-002, DNA 5800T, AD AI09644

TN 324, C. W. Jones, Electron-Ion and Ion-Ion Recombination Coefficients for Use in EMP Prediction Codes, 7 Dec 77, Dikewood Corp., DC-TN-1290-6, AFWL-TR-78-221, AD B057812

TN 325, C. W. Jones and W. M. Folkner, Gamma-Ray and Neutron EMP Source Comparisons and Uncertainties for Surface Burst EMP Codes, 20 Oct 78, Dikewood Corp., DC-TN-1298-1, AFWL-TR-79-93, AD B051074

TN 326 thru 339 , Not Currently Available

TN 340, M. Scheibe, Air Chemistry Relating to EMP, Aug 78, Mission Research Corporation

TN 341, Not Currently Available

TN 342, A. J. van Lint, Measurement of Electron Attachment and Mobility in Dry and Wet Air, Dec 78, Mission Research Corporation, MRC/SD-R-31, DNA 4788T, AD A071333

TN 343, J. G. Chervevak and V. A. J. van Lint, Measurement of the Electrical Properties of Highly Dosed Air ii1the Millisecond Regime, 24 Oct 80, Mission Research Corporation, MRC/SD-R-64, DNA 5492T, AD A099984

TN 344, J. G. Chervenak and V. A. J. van Lint, Ion-Ion Recombination Rate in the EMP Source Region, 10 Feb 82, Mission Research Corporation, MRC/SD-R-98, DNA-TR-81-83, AD A131148

TN 345, Not Currently Available

TN 346, D. K. Davies, Measurements of Swarm Parameters in Dry Air, May 83, Westinghouse Electric Corp.

TN 347, V. A. J. van Lint and J. W. Erler, Buried Conductor Studies, Dec 81, Mission Research Corporation, AFWL-TR-82-40, MRC/SD-R-93 79

TN 348, R. E. Leadon, T. M. Flanagan, C. E. Mallon, and R. Denson, Nonlinear Electrical Studies on Buried Conductors, 1 Nov 83, JAYCOR - .

TN Not Currently Available

TN 350, R. N. Carlile and M. E. Righettini, A Phenomenological Model of Soil Breakdown, 10 Mar 83, AFWL-TR-83-73, AD AI37997

TN 351, H. P. Neff and D. A. Reed, Plane Wave (EMP) Incidence on a Finitely Conducting Plane Earth with the Magnetic Field Intensity Parallel to the Earth's Surface, 8 Feb 84, University of Tennessee

TN 352, D. K. Davies and P. J. Chantry, Air Chemistry Measurements II, May 85, Westinghouse Electric Corp., AFWL-TR-84-130, AD Al56041

TN 353, C. L. Longmire, EMP on Honolulu from the Starfish Event, Mar 85, Mission Research Corp.

TN 354, C. L. Longmire, R. M. Hamilton, and J. M. Hahn, A Nominal Set of High-Altitude EMP Environments, Jan 87, Mission Research Corp., AD B110909

TN 355, L Kohlberg, Three-Dimensional Electromagnetic Ground Response for Multi-Layered Earth: Surface Integral Representation with Frequency Dependent Electrical Parameters, Aug 88, Kohlberg Associates

TN 356, I. Kohlberg, Solution of Two Dimensional-Two Region Electromagnetic Ground Response, Aug 88, KohlbergAssociates .

TN 357, J. J. A. Klassen, Time-Domain Analysis of One-Dimensional Electromagnetic Scattering by Lossy Media, Jun 90, Physics and Electronics Laboratory

TN 358, P. R. Barnes and F. M. Tesche, On the Direct Calculation of a Transient Plane Wave Reflected from a Finitely Conducting Half-Space, 5 Dec 90, Oak Ridge National Laboratory

TN 359, K. D..Leuthauser, Representations of Reflection and Transmission Functions of a Canonical Electromagnetic Waveforms at a Conducting Half-Space, Dec 90, Franhofer-Institut fur Nuturwissenschaftlich-Technische Trendanalysen

TN 360, C. L. Longmire and J. L. Gilbert, Theory ofEMP Coupling in the Source Region, 28 Feb 80, Mission Research Corp., DNA 5687F 81

TN 361, I. L. Gallon, Fractured Solution Method (FSM) for Solving Maxwell's Equation, 1 May 91, Interference Technology International Consultants Limited

TN 362, C. W. Prettie, Diffraction Past a Perfectly Conducting Sphere Embedded in a Conductor, 10 lun 91, Berkely Research Associates

TN 363, K. D. Leuthauser, A Complete EMP Environment Generated by High-Altitude Nuclear Bursts, Oct 92, Franhofer-Institut fur Nuttirwissenschaftlich-Technische Trendanalysen

TN 364, K. D. Leuthauser, A Complete EMP Environment Generated by High-Altitude Nuclear Bursts, Data and Standardization, Feb 94, Franhofer-Institut fur Nuturwissenschaftlich-Technische Trendanalysen

TN 365, K. D. Leuthauser, Distribution Functions of the HEMP Environment, Nov 95, Franhofer-Institut fur Nuturwissenschaftlich- Technische Trendanalysen

TN 366, D.V. Girl and S.L. Dvorak, Propagation of Impulse-Like Waveforms Through the Ionosphere Modelled by a Cold Plasma, 2 Feb 96, Pro-Tech and University of Arizona

TN 367, E.M. Tesche, On the Modeling and Representation of a Lossy Earth for Transient Electromagnetic Field Calculatons, 9 July 02, EMConsultant

TN 368, C.L. Longmire, Justification and Verification of High-Altitude EMP Theory, June 86, Mission Research Corp.