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Numerical Modeling of Megagauss Fields on Aluminum Rods VOLODYMYR MAKHIN, THOMAS AWE, BRUNO BAUER, University of Nevada, Reno, IRVIN LINDEMUTH, RICHARD SIEMON, University of Nevada, Reno, WALT ATCHISON, THOMAS TIERNEY, Los Alamos National Laboratory, MICHAEL FRESE, SHERRY FRESE, NumerEx, MICHAEL DESJARLAIS, THOMAS HAILL, Sandia National Laboratory, RICKEY FAEHL, Allyson Faehl, Inc., SERGEY GARANIN, VNIIEF — Metal plasma formation and stability were studied on the surface of aluminum rod in recent experiments driven by the UNR Zebra generator [1]. The surface response to megagauss fields is important for a number of applications, including Magnetized Target Fusion (MTF). Recent radiation-hydro numerical simulations by Garanin et al. show how plasma can be generated on a metal surface [2]. Numerical simulations with codes used at UNR (MHRDR and RAVEN), and codes from other institutions, show luminosity, radial expansion, and plasma formation or lack thereof that can be compared with experimental data. The sensitivity of modeling to various equation-of-state and resistivity models will be discussed.

[1] Fuelling et al., this conference

[2] S.F. Garanin et al., J. Appl. Mech. Tech. Phys. 46, 153(2005).

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