1067-60-1489   **John C. Wierman** and **Matthew R.A. Sedlock*** (`msed84@jhu.edu`), Dept. of Applied Mathematics and Statistics, 100 Whitehead Hall, Baltimore, MD 21218. *On equality of critical exponents in inhomogeneous percolation models.* Preliminary report.

In the inhomogeneous bond percolation model, bonds in a given lattice are open with different probabilities. Because of this, the percolation threshold is expressed as a critical surface, rather than as a single point as in the homogeneous model. Near the critical surface, it is believed that several functions of interest, such as the percolation probability function and the expected cluster size, behave according to certain power laws. The exponents in these power laws are known as critical exponents. Because the percolation threshold is given by a critical surface, it is necessary to look at directional power laws and, as a result, directional critical exponents in studying their behavior. We show a range of directions in which equality of directional critical exponents can be established, and that the range of directions depends on which point on the critical surface we study. (Received September 21, 2010)