1067-Z1-1470   **Deirdre L Smeltzer*** (`smeltzed@emu.edu`), 1200 Park Road, Harrisonburg, VA 22802, and **Owen D Byer** (`byer@emu.edu`), 1200 Park Road, Harrisonburg, VA 22802. *Comparing Circular and Spherical Inversions.* Preliminary report.

Most mathematicians are likely familiar with inversion of a plane with respect to a circle. An inversion "erases" the distinction between lines and circles, often demonstrating that apparently unrelated geometric properties are actually equivalent.

In this talk we generalize this concept to inversion of 3-space with respect to a sphere and its properties. We introduce some generalizations of problems from 2-space for which spherical inversion solutions seem promising. This talk serves as in introduction for the talk "Applications of Spherical Inversions." (Received September 21, 2010)