

1125-35-2781

**Danny Arrigo\***, Department of Mathematics, University of Central Arkansas, Conway, AR 72035, and **Brandon Ashley**, **Seth Bloomberg** and **Thomas Deatherage**. *Nonclassical Symmetries of a Nonlinear Diffusion Equation and a System Equivalent.*

It is generally known that classical point and potential Lie symmetries of differential equations (the latter calculated as point symmetries of an equivalent system) can be different. We question whether this is true when the symmetries are extended to nonclassical symmetries. In this talk we consider a nonlinear diffusion equation where we will show that the majority of the nonclassical point symmetries are inclusive to the nonclassical potential symmetries. We highlight a special case where the opposite is true. (Received September 20, 2016)