

1067-33-1566

Jennie D'Ambroise* (jdambroi@morris.umn.edu), 600 East 4th St., Math Sci Div, Morris, MN 56267, and **Floyd L Williams**. *Parametric solution of certain nonlinear differential equations with applications in cosmology.*

We study a differential equation whose solution is written parametrically in terms of Weierstrass's $\wp(w)$, $\sigma(w)$ and $\zeta(w)$ functions. By writing the equation in terms of some inverse functions we find that an 1865 formula, due to Weierstrass and published by Biermann, becomes relevant. Finally, we apply the result to some evolution equations in cosmology. This talk is a synopsis of joint work by the author with Floyd L. Williams. (Received September 21, 2010)