

1116-VH-2925 **Anilkumar Devarapu*** (anilkumar.devarapu@asurams.edu), Department of Mathematics and Computer Scienc, 504 College Dr, Albany, GA 31705, and **Zephyrinus C Okonkwo** and **Marrisa Merrell**. *Unsteady boundary-layer flow of nanofluid over a flat plate.*

The unsteady boundary-layer flow of nano-fluid over a flat plate in a free stream is investigated. The model used for the nanofluid incorporates the effects of Brownian motion and thermophoresis. A new self-similar solution is obtained and the resulting system of nonlinear ordinary differential equations is solved numerically using an implicit finite difference scheme in combination with the quasilinearization technique. The solution depends on the Prandtl Number Pr , Lewis number Le , Brownian motion number Nb and thermophoresis number Nt . Numerical results are presented for the skin friction coefficient, the local Nusselt number and the local Sherwood number as well as for the velocity, temperature and the nanoparticle volume fraction profiles. (Received September 23, 2015)