1044-60-21 **Jason Swanson***, University of Central Florida, Department of Mathematics, 4000 Central Florida Blvd., P.O. Box 161364, Orlando, FL 32816. *A change of variable formula with Itô correction term.*

We consider the solution $u(x,t)$ to a stochastic heat equation. For fixed x, the process $F(t) = u(x,t)$ has a nontrivial quartic variation. It follows that F is not a semimartingale, so a stochastic integral with respect to F cannot be defined in the classical Itô sense. We show that for sufficiently differentiable functions $g(x,t)$, a stochastic integral $\int g(F(t),t)\,dF(t)$ exists as a limit of discrete, midpoint style Riemann sums, where the limit is taken in distribution in the Skorohod space of cadlag functions. Moreover, we show that this integral satisfies a change of variables formula with a correction term that is an ordinary Itô integral with respect to a Brownian motion that is independent of F. (Received June 27, 2008)