1020-60-37 **Victor Goodman** and **Kyounghee Kim*** (`kyoukim@indiana.edu`), FSU Mathematics Department, 208 Love Bldg., Tallahassee, FL 32306. *Eexponential martingales and time integrals of brownian motion.*

We find a simple expression for the probability density of $\int \exp(B_s - s/2)ds$ in terms of its distribution function and the distribution function for the time integral of $\exp(B_s + s/2)$. The relation is obtained with a change of measure argument where expectation over the entire probability space. We develop precise information concerning the lower tail probabilities for these random variables as well as for time integral of geometric Brownian motion with arbitrary constant drift. In particular, $E[\exp(\theta/ \int \exp(B_s)ds)]$ is finite iff $\theta < 2$. (Received August 02, 2006)