1048-60-354 **Jason Swanson***, University of Central Florida, Dept of Mathematics,4000 Central Florida Blvd, P.O. Box 161364, Orlando, FL 32816-1364. *Fluctuations of the empirical quantiles of independent Brownian motions.*

We consider n independent, identically distributed one-dimensional Brownian motions, $B_j(t)$, where $B_j(0)$ has a rapidly decreasing, smooth density function f. The empirical quantiles, or pointwise order statistics, are denoted by $B_{j:n}(t)$, and we are interested in a sequence of quantiles $Q_n(t) = B_{j(n):n}(t)$, where $j(n)/n \to \alpha \in (0,1)$. This sequence converges in probability in $C[0,\infty)$ to $q(t)$, the α-quantile of the law of $B_j(t)$. Our main result establishes the convergence in law in $C[0,\infty)$ of the fluctuation processes $F_n = n^{1/2}(Q_n - q)$. The limit process F is a centered Gaussian process and we derive an explicit formula for its covariance function. We also show that F has many of the same local properties as $B^{1/4}$, the fractional Brownian motion with Hurst parameter $H = 1/4$. For example, it is a quartic variation process, it has Hölder continuous paths with any exponent $\gamma < 1/4$, and (at least locally) it has increments whose correlation is negative and of the same order of magnitude as those of $B^{1/4}$. (Received February 10, 2009)