

**Meeting:** 1006, Lubbock, Texas, AMS CP 1, Session for Contributed Papers

1006-62-22            **Eun-Joo Lee\*** (elee@ic.edu), 1101 W. College ave., Jacksonville, IL 62650, and **Frits Ruymgaart**. *Application of the Hájek -LeCam Convolution Theorem*. Preliminary report.

We consider the usual estimator of a linear functional of the unknown function in inverse nonparametric regression models. The unknown regression function which is the parameter of interest, is infinite dimensional in these models. Since a function in a Hilbert space has a Fourier expansion in an orthonormal basis, we estimate an unknown input function by estimating its Fourier coefficients. It is surprising to see that the traditional estimator of the Fourier coefficient is not asymptotically efficient according to Hájek-LeCam Convolution theorem. We will compare the estimators, the traditional and the improved estimators through simulation studies. (Received December 20, 2004)