1030-42-313 **Xiaochun Li*** (xcli@math.uiuc.edu), Deopartment of Mathematics, University of Illinois at Urvbana-Champaign, Urbana, IL 61801. *Bilinear oscillatory integrals along curves.* Preliminary report.

We discuss some bilinear oscillatory integrals along some curves such as polynomial curves.

For example, let $T(f,g)$ be defined by

$$T_\beta(f,g)(x) = p.v \int_{-1}^{1} f(x-t)g(x-t^2)e^{1/|t|^\beta}\frac{dt}{t}\,.$$

We ask whether T_β maps $L^p \times l^q$ to L^r for some p, q, r.

It turns out that such problems are related to the trilinear oscillatory integrals. If $\beta > 6$ we can obtain that T_β is bounded form $L^p \times L^q$ to L^r for all $pq > 1$ and $1/r = 1/p + 1/q$. It is still open when $0 < \beta < 6$. This is a joint work with D. Fan. (Received August 06, 2007)