1123-05-198 **Xiaoyu Liu*** (xiaoyu.liu@wright.edu), 3640 Colonel Glenn HWY, Dayton, OH 45435. *Equality Conditions for an Erdős-Ko-Rado Theorem for Direct Products.* Preliminary report.

Let X be an n-element set, and let $\binom{X}{k}$ be the family of all k-subsets of X. Suppose that $n = n_1 + n_2 + \cdots + n_d$, $k = k_1 + k_2 + \cdots + k_d$, and $X = X_1 \cup X_2 \cup \cdots \cup X_d$, where $|X_i| = n_i$. Let

$$\mathcal{H} = \left\{ F \in \binom{X}{k} : |F \cap X_i| = k_i, \forall i = 1, 2, \ldots, d \right\}.$$

Frankl proved an Erdős-Ko-Rado theorem for direct products: Suppose that $\mathcal{F} \subset \mathcal{H}$ is intersecting and $k_d/n_d \leq \cdots \leq k_1/n_1 \leq 1/2$. Then $|\mathcal{F}|/|\mathcal{H}| \leq k_1/n_1$ holds. In this talk, we will examine the conditions when equality holds in Frankl's theorem, i. e., when $\mathcal{F}/\mathcal{H} = k_1/n_1$. (Received August 26, 2016)