1025-05-179 **Tao Jiang**, Miami University, Department of Mathematics and Statistics, Oxford, OH 45056, **Manley Perkel*** (manley.perkel@wright.edu), Wright State University, Department of Mathematics and Statistics Dayton, OH 45435, and **Dan Pritikin**, Miami University, Department of Mathematics and Statistics, Oxford, OH45056. *Cyclic Arrangements of k-sets with Local Intersection Constraints. Preliminary Report.* Preliminary report.

Given positive integers n, k, s with $0 < k < n$, does there exist a cyclic ordering of the k-sets of $\{1, 2, \ldots, n\}$ such that every s consecutive k-sets are pairwise intersecting? For a given n and k, let $f(n, k)$ denote the maximum s for which such an ordering exists. Phrased in terms of graphs, $f(n, k)$ is the largest d such that the complement of the Kneser graph $K(n, k)$ contains the d'th power of some Hamiltonian cycle in that complement.

For each $n \geq 6$ we show that $f(n, 2) = 3$. We show that $f(n, 3)$ equals either $2n - 8$ or $2n - 7$ when n is sufficiently large, conjecturing that $2n - 8$ is the correct value. For each $k \geq 4$ and n sufficiently large we show that

$$\frac{2n^{k-2}}{(k-2)!} - \frac{(\frac{7}{2}k - 2)n^{k-3}}{(k-3)!} + O(n^{k-4}) \leq f(n, k) \leq \frac{2n^{k-2}}{(k-2)!} - \frac{(\frac{7}{2}k - c)n^{k-3}}{(k-3)!},$$

where c is an absolute positive constant. This is a preliminary report. (Received January 23, 2007)