1067-90-1217 **Chandra Chekuri**, **Sanjeev Khanna**, **Loic Seguin-Charbonneau** and **Burce Shepherd*** (bruce.shepherd@mcgill.ca), Burnside Hall Room 1113, Math and Stats / McGill University, 805 Sherbrooke Street West, Montreal, Quebec H3A2k1, Canada. *Maximum Disjoint Paths and Flow-Cut Gaps.* Preliminary report.

We consider disjoint path problems in undirected graphs: we have a graph $G$ and demand pairs $s_it_i$, $i = 1, 2, ..., k$. A subset of the demands is *satisfiable* if there is a collection of edge-disjoint paths connecting the pairs for the given subset. In the maximization version we consider the problem of satisfying the maximum number of pairs possible. For directed graphs this is known to be hard to approximate to within (roughly) $\sqrt{n}$ factors. In planar graphs, however, one can achieve a constant factor bound if edge congestion of 4 is allowed. We outline this approach and show how congestion 3 can in fact be achieved. (Received September 20, 2010)