1067-90-438   **Monaldo Mastrolili**, **Maurice Queyranne**, **Andreas S. Schulz**, **Ola Svensson** and **Nelson A. Uhan*** (`nuhan@purdue.edu`), School of Industrial Engineering, Purdue University, 315 N. Grant Street, Grissom Hall 308, West Lafayette, IN 47907. *Minimizing the sum of weighted completion times in a concurrent open shop.*

We study minimizing the sum of weighted completion times in a concurrent open shop environment. We show several interesting properties of various natural linear programming relaxations for this problem, including that they all have an integrality gap of 2. In addition, we propose a simple combinatorial 2-approximation algorithm that can be viewed as a primal-dual algorithm or a greedy algorithm that starts from the end of the schedule. Finally, we show that this problem is inapproximable within a factor of $6/5 - \epsilon$ (or within a factor $4/3 - \epsilon$ if the Unique Games Conjecture is true) for any $\epsilon > 0$, unless P = NP. (Received September 03, 2010)