1070-00-155   **Bo Xiong*** (`bxiong@conncoll.edu`), Connecticut College 5108, 270 Mohegan Avenue, New London, CT 06320, and **Christine Chung** (`cchung@conncoll.edu`), 270 Mohegan Avenue, New London, CT 06320. *New Lower Bounds for Weighted Completion Time Scheduling.*

We consider the classic scheduling problem of minimizing the total weighted completion time on identical parallel machines when jobs are arriving over time. All the jobs are preemptible. The competitive ratio of an online algorithm is the worst-case ratio of the weighted total completion time of the schedule produced by the algorithm to the weighted total completion time of the optimal offline solution. We prove a new general lower bound of 21/19 for the competitive ratio of any deterministic online algorithm for the above problem. We then focus on analyzing the performance of the natural online algorithm WSRPT (Weighted Shortest Remaining Processing Time First). We prove that the lower bound on the competitive ratio of WSRPT is 22/19. We conjecture that there is a matching upperbound for the competitive ratio of WSRPT, and a proof that WSRPT is 2-competitive is currently a work in progress. (Received February 08, 2011)