Abstract

In the paper we consider minimizing the ℓ_k-norms of flow time on a single machine offline using a preemptive scheduler for $k \geq 1$. We show the first $O(1)$-approximation for the problem, improving upon the previous best $O(\log \log P)$-approximation by Bansal and Pruhs (FOCS 09 and SICOMP 14) where P is the ratio of the maximum job size to the minimum. Our main technical ingredient is a novel combination of quasi-uniform sampling and iterative rounding, which is of interest in its own right.