1023-D1-1226   **Nicole Megow*** (`nicole.megow@tu-berlin.de`), TU Berlin, Strasse des 17. Juni 136, 10623 Berlin, Germany, and **Tjark Vredeveld**. *Approximative policies for Preemptive Stochastic Online Scheduling.*

We present a first constant performance guarantees for preemptive stochastic scheduling to minimize the sum of weighted completion times. For scheduling jobs with release dates on identical parallel machines we give two policies with a guaranteed performance ratio of 2 which matches the currently best known result for the corresponding deterministic online problem.

Our policies apply to the recently introduced stochastic online scheduling model in which jobs arrive online over time. In contrast to the previously considered nonpreemptive setting, our preemptive policies extensively utilize information on processing time distributions other than the first (and second) moments. In order to derive our results we introduce a new nontrivial lower bound on the expected value of an unknown optimal policy that we derive from an optimal policy for the basic problem on a single machine without release dates. This problem is known to be solved optimally by a Gittins index priority rule. This priority index also inspires the design of our policies. (Received September 25, 2006)