Abstract:

We study differences between contiguous and non-contiguous parallel task schedules. Parallel tasks can be executed on more than one processor simultaneously. In the contiguous schedules indices of the processors assigned to a task must be a sequence of consecutive numbers. In the non-contiguous schedules processor indices may be arbitrary. Nonpreemptive schedules are considered. Given a parallel task instance, optimum contiguous and non-contiguous schedules can be of different length. We analyze the smallest instances where such a difference may arise, provide bounds on the difference of the two schedules lengths and prove that deciding whether the difference in schedule length exists is NP-complete.