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Maximally Pair Separated Round Robin Tournaments: Ordering the Blocks of a Design
In a Round Robin Tournament with multiple edges, we can ask that we schedule the successive games between any given pair as far apart in time as possible. We show that for a cyclic $n$ day, $\lambda=2$, tournament schedule on $n$ players it is impossible to ask that successive game for the same pair be at least $\lfloor n / 2\rfloor$ days apart. However we also show that if we allow a small number to be separated by $\lfloor(n-2) / 2\rfloor$ days apart, then such a schedule is possible. These orderings fit into an interesting unifying framework that brings together quite a few previously known results.

