Decomposing tournaments into paths

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In this talk we consider a generalisation of Kelly's conjecture which is due Alspach, Mason, and Pullman from 1976. Kelly's conjecture states that every regular tournament has an edge decomposition into Hamilton cycles, and this was proved by Kühn and Osthus for large tournaments. The conjecture of Alspach, Mason, and Pullman concerns general tournaments and asks for the minimum number of paths needed in an edge decomposition of each tournament into paths. There is a natural lower bound for this number in terms of the degree sequence of the tournament and they conjecture this bound is correct for tournaments of even order.

Almost all cases of the conjecture are open and we prove many of them.

This is joint work with Allan Lo, Jozef Skokan, and John Talbot.