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Theodore Molla* (tmolla@asu.edu), **H.A. Kierstead** and **Andrzej Czygrinow**. *Perfect tilings in graphs and digraphs.*

A graph G has a perfect H -tiling if $|G| = k|H|$ and G contains k independent copies of H . We will discuss minimum degree conditions on both graphs and digraphs that ensure perfect tilings. An equivalent form of the Hajnal-Szemerédi Theorem states that if G is a graph on rk vertices and $\delta(G) \geq (r-1)k$ then G contains a perfect K_r -tiling. An example of our results is an extension of this to directed graphs. We show that for any r there exists n_0 such that if D is a directed graph on $n = rk \geq n_0$ vertices with $\min_{v \in V(D)} \{d^+(v) + d^-(v)\} \geq 2(r-1)k - 1$ then D contains k independent transitive tournaments on r vertices. Like most of the results we will present, this uses the probabilistic absorbing technique in a manner similar to Levitt, Sárközy and Szemerédi. (Received September 25, 2012)