1064-05-102 **Seog-Jin Kim** and **Alexandr Kostochka*** (kostochk@math.uiuc.edu), Department of Mathematics, University of Illinois, 1409 W. Green St., Urbana, IL 61801, and **Douglas B. West**, **Hehui Wu** and **Xuding Zhu**. *Each sparse graph decomposes into a forest and a graph with bounded degree.* Preliminary report.

A (k, d)-decomposition of a graph G is a partition of its edges into k forests and a graph with maximum degree at most d. A recent series of papers on $(1, d)$-decompositions of planar graphs with a given girth was inspired by the observation of X. Zhu that the game chromatic number and the game coloring number of every $(1, d)$-decomposable graph is at most $4+d$. We prove that every graph G with *maximum average degree*, $mad(G)$, less than $4-\frac{4}{d+2}$ is $(1, d)$-decomposable. The result is sharp (since for every $d \geq 1$ there are graphs G_d with $mad(G_d) = 4 - \frac{4}{d+2}$ that are not $(1, d)$-decomposable) and implies several recent results on planar graphs with given girth. We also give a sharp sparseness condition for a graph to be (k, d)-decomposable when $k < d$. (Received September 01, 2010)