1080-05-87 **Oleg Borodin** and **Alexandr Kostochka***, kostochk@math.uiuc.edu. *Improper 2-colorings of sparse graphs.* Preliminary report.

We consider one of the simplest kinds of improper colorings – colorings with two colors. A graph G is (j,k)-colorable if its vertices can be partitioned into subsets V_1 and V_2 such that in $G[V_1]$ every vertex has degree at most j and in $G[V_2]$ every vertex has degree at most k. We prove that every graph with the maximum average degree at most $\frac{12}{5}$ is $(1,0)$-colorable and that if $k \geq 2j+2$, then every graph with maximum average degree at most $2\left(2-\frac{k+2}{(j+2)(k+1)}\right)$ is (j,k)-colorable. Both bounds are sharp. (Received January 11, 2012)