

We wish to show that there is no four color measurable unit graph coloring in the plane. It is known by simple constructions that for n the chromatic number of the unit graph in \mathbb{R}^2 , $4 \leq n \leq 7$. There is also a bound on the large scale density any single color can have in a measurable unit graph coloring of \mathbb{R}^2 . But this is not strong enough to preclude a four color coloring. In showing this result we will use mainly the well known Fubini Theorem (FT), and the Lebesgue Density Theorem (LDT). The latter says that for U a measurable set, $\{x \in U \mid \lim_{\epsilon \rightarrow 0} \frac{1}{\pi \epsilon^2} \text{area of } (D(x, \epsilon) \cap U) = 1\}$ is almost all of U .