

We show no collection  $\{W_j\}$  exists s.t. ① & ② hold &  $W_j \subset A^{-j}(U)$ .

By ①, for  $j \geq 0$ ,  
 $m(W_{-j}) \leq 1$ .

$$\therefore \sum_{j=0}^{\infty} m(A^{-j}(W_j)) \leq \sum_{j=0}^{\infty} (4/3)^j < \infty. \quad \textcircled{\star}$$

for  $j \geq 1$ ,  $m(W_j) \leq 2^{-j}$ .

$$\therefore \sum_{j=1}^{\infty} m(A^j(W_j)) \leq \sum_{j=1}^{\infty} (4/3)^j 2^{-j} = \sum_{j=1}^{\infty} (2/3)^j < \infty. \quad \textcircled{\star}$$

