$m^*(\bigcup_{n=1}^\infty U_n) =$
$\sum_{n=1}^\infty m^*(U_n)$
(U_n)
$U :=$
$\bigcup_{n=1}^\infty U_n$
U_n
U_n
$\ell(U_n) =$
∞
n
$m(U) =$
∞
$\ell(U_n) <$
∞
n
$m^*(U) \leq$
$\sum_{n=1}^\infty \ell(U_n)$
$\epsilon >$
0
$K_n \subset$
U_n
$\ell(U_n)-$
$\ell(K_n) <$
$\epsilon 2^{-n}$
$S_i :=$
$\bigcup_{n=1}^i K_n$
S_i
S_i
K_n
$m(S_i) =$
$\sum_{n=1}^i \ell(K_n)$
$m(U) \geq$
$\lim_{i\to\infty} S_i =$
$\sum_{n=1}^\infty \ell(K_n) =$
$(\sum_{n=1}^\infty \ell(U_n))-$
ϵ
n
G_n
$[0,1]$
$[0,1]$
$m^*(G_n) <$
$1/n$
$H =$
$\bigcap_{n=1}^\infty G_n$
$m^*(H) =$
0
$[0,1]\setminus$
H
$[0,1]$
$[0,1]$
n
$m^*(H) <$
$m^*(G_n) =$
$1/n$
$H \subset$
G_n
$m^*(H) =$
0
$[0,1]\setminus$
$H =$
$\bigcup_{n=0}^\infty [0,1]\setminus$
G_n
n
$[0,1]\setminus$
G_n
$[0,1]\setminus$
H
α
$0 <$
$\alpha <$
1
n
2^{n-1}
$[0,1]$
$(1-$
$\alpha)3^{-n}$
Δ_α
$m^*(\Delta_\alpha) =$
α
$C_0 =$
$[0,1]$
C_n
n
$\Delta_\alpha =$
$\bigcap_n C_n$

B_n
$[0,1]\setminus$
$\Delta_\alpha =$
$\bigcup_{n=1}^\infty B_n$
$B_n \to$
0
$n \to$
∞
N
$[0,1]\setminus$
$F \subset$
$\bigcup_{n=1}^N B_n.$
$C_N \subset$
F
$\alpha =$
$\lim_{n\to\infty} C_n \leq$
Δ_α
$m^*(\Delta_\alpha) =$
α
$\bigcup_{n=1}^\infty \Delta_{1-1/n}$
$[0,1]$
$S :=$
$\bigcup_{n=1}^\infty \Delta_{1-1/n}$
n
$\Delta_{1-1/n} \subset$
$S \subset$
$[0,1]$
$m^*(S) =$
1
$m^*(S)+$
$m^*([0,1]\setminus$
$S) \leq$
1
$m^*([0,1]\setminus$
$S) =$
0
S
$0 \leq$
$\alpha <$
1
Δ_α
Δ_α
S
E
$m(E) =$
1
$F \subset$
E
$m(F) =$
$1/2$
$f(x) =$
$m(E\cap$
$(-\infty, x])$
F
$F \subset$
E
$m(F) =$
$1/2$
F
$F \subset$
E
$m(F) =$
$1/2$
m
$K \subset$
E
$m(K) =$
0.99
(q_n)
$G :=$
$K\setminus$
$\bigcup_{i=1}^\infty B_{0.01/2^{-n}}(q_n)$
$m(G) \geq$
0.98
$f(x) =$
$m(G\cap$
$(-\infty, x])$
f
$xleqy$
$f(y)-$
$f(x) =$
$m(G\cap$
$(-\infty, y])-$
$m(G\cap$
$(-\infty, x]) =$
$m(G\cap$