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1.

$u = u(x)$ $(-1, 1)$,

$$\begin{cases} -u'' = f(u), & x \in (-1,1), \\ u > 0, & x \in (-1,1), \\ u(-1) = u(1) = 0. \end{cases}$$

, $u \in C^2((-1,1)) \cap C^0([-1,1])$, $f \in [0, +\infty) \to \mathbb{R}$ Lipschitz . , $b \in \mathbb{R}$, $\left|\frac{f(s)-f(t)}{s-t}\right| \le b$, $s, t \in \mathbb{R}$, $s \neq t$.

, $x \in (-1,1)$ $u(-x) = u(x)$, $0 < x < 1$ $u'(x) < 0$.

.

Theorem 1. (*Gidas, Ni, Nirenberg*)

$u = u(x)$ $B_1 \subset \mathbb{R}^n$, $n \ge 2$, ,

$$\begin{cases} -\Delta u = f(u), & x \in B_1 \\ u = 0, & x \in \partial B_1, \end{cases}$$

$f : [0, +\infty) \to \mathbb{R}$ Lipschitz , $u \in C^2(B_1) \cap C^0(\overline{B_1})$,

(1) u . $x, y \in B_1$, $|x| = |y|$, $u(x) = u(y)$;

$0 < r < 1$, $u'(r) < 0$. $\phi(r)$, $x \in B_1$, $u(x) = \phi(|x|)$, $0 < r < 1$ $\phi'(r) < 0$.

Remark. * B. Gidas, W. Ni, L. Nirenberg\cite{GidasNiNirenberg1979Symmetry} .

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