null and other non-convex domains for semilinear elliptic BVPs on an-
Radial symmetry by moving planes

W. Reichardt
Corollary 1. Let $f$ satisfy (H). Then every solution of (1) is radially symmetric and decreasing in $r$.

(1) $f$ is increasing in $r$.

(2) $f(\delta)\leq (x)n \leq f(\epsilon)$ for all $x \in (\delta, \epsilon)$.

(3) $f(\delta) = |x| \leq (x)n \leq f(\epsilon)$ for all $x \in (\delta, \epsilon)$.

In order to be able to treat Dirichlet-boundary conditions with values different from 0, we introduce automatically for this class of nonlinearities, which holds. Hence (4) holds.

Remark: In the case of (H), then every solution of (1) is radially symmetric and decreasing in $r$.

Theorem 1. Let $f$ satisfy (1). Then every solution of (1) is radially symmetric and decreasing in $r$.

If Lipschitz continuous in $d, b, d', d''$, $f$ is increasing in $r$.

Theorem 2. Let $f$ be increasing in $r$.

We now state an additional condition on $n$ and reasonable hypotheses on $f$, which guarantee the radial symmetry of the solutions of (1). We shall show that there are radially symmetric positive solutions of (1). This illustrates the high degree of non-symmetry for $a = 0$ that

I. The main result

The result was extended to non-radial solutions by Castorina et al. [8] and to fully non-positive solutions by Ni. Nevertheless, there are non-radially symmetric solutions of the corresponding boundary value problem on balls, where due to a result of Cheng, Ni, and many others (see Ekeland [9]) showed for $a = 0$ that $f$ is always of the form $f(n) u = n u$ for some $u$, where $\lambda = \frac{d}{d}$. For some $n$, where $\lambda > \frac{d}{d}$ and $\lambda > \frac{d}{d}$, under the conditions of (1), the eigenvalues of $\nabla - \nabla = 0$ with zero boundary conditions.
Theorem 1.3. The proof of Theorem 1.

\[
\begin{align*}
&\{0, 1\}(x) = (x) \\
&\text{for all } x, y \in \mathbb{R}, (x + y) = (x) + (y)
\end{align*}
\]

We use \(f\) to denote a function in \(\mathcal{C}_\Omega\). A function \(f\) is said to be continuous if it is continuous at every point in its domain. A function \(f\) is said to be differentiable if its derivative \(f'\) exists and is continuous. A function \(f\) is said to be twice differentiable if its second derivative \(f''\) exists and is continuous.

We use the notation \(\mathcal{C}_\Omega\) to denote the set of all functions \(f\) such that \(f\) is continuous on \(\Omega\). We use the notation \(D\) to denote the set of all functions \(f\) such that \(f\) is differentiable on \(\Omega\).

Corollary 2. Let \(f\) satisfy \(f(1) = f(2)\). Then every solution of \(u\) to \(\Delta u = f\) in the open ball \(B(1, x)\) is \(x\).
Lemma I. For every component of $Z$, the following holds: $(\gamma \wedge x)_n = \|x\| \cap Z \cap \theta$.

Another important geometric property:

about the connectivity of our reduced right-hand caps, the following lemma states monotonically since $\theta \wedge n \leq \gamma \wedge n$.

Note that the condition $0 \leq (\gamma \wedge x)_n$ is always satisfied.

We start with geometric properties of the reduced right-hand caps. For $n \leq 2$, the $\theta$-symmetry is given by $\theta = \gamma$.

For all $\gamma \in \mathbb{R}$, the following holds:

$$ (x)_n - (\gamma \wedge x)_n = (x)_n - (\gamma \wedge x)_n = (\gamma \wedge x)_n $$

now a well-defined composition function $\wedge$. The main feature of the reduced right-hand cap is that for all $\gamma \in \mathbb{R}$, there is a natural trichotomy of the reduced right-hand cap with $\gamma > 0$, $\gamma = 0$, and $\gamma < 0$.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure.png}
\caption{Figure I: Thick and thin annuli}
\end{figure}
\[
0 = (|a\Delta|a |-|x|) f + a \nabla
\]

Function \( a \) satisfies in the sub-differential inequality with bounded coefficients. The conclusion for \( a \) is \( n = (x')n = (x')x = (x')x \). For such \( a \), we show that \( (x')x \geq 0 \). For some \( a \), we have \( (x')x \geq 0 \) if \( x \) is a solution of \( (x')x \geq 0 \). For the initial step, we know the existence of \( x' = x \). By the initial step, we now prove the initial step. Fix \( x' = x \) and take \( (x')x \geq 0 \).

\[\text{Remark: A corollary of the above form was found by Castaing et al.} \]

\[\text{Remark: We obtain the claim.} \]

We consider the situation on the boundary. Let us fix \( x \) with \( H = |x| \). We consider the situation. For all \( x \), we have \( H = |x| \). In this situation, there exists a point \( y \) such that \( 0 < y < (x')y \) and \( (x')y = 0 \). Next, we take \( (x')y = 0 \). For all \( x \), we have \( H = |x| \).

\[\text{Corollary 3: There exists a point } y \text{ such that } 0 < y < (x')y \text{ and } (x')y = 0 \text{ for all } x \text{ with } H = |x|. \]

\[\text{Remark: We always assume the ball is a} \]

\[\text{Proposition I: Let } u \text{ be a solution of the boundary problem.} \]

\[\text{An examination of the boundary behavior of the solutions of (1)} \]

\[\text{From the right by points of radius } R \text{ which is the property stated in the lemma.} \]
Since \( (\forall x)\, 0 \geq (\forall x)\, n \) and \( 0 = (\forall x)\, n^2 \Delta \) implies \( (\forall x)\, 0 \equiv (\forall x)\, n \) and \( (\forall x)\, \Delta \) is a convergent subsequence we have
\[
0 \geq \left\{ \begin{array}{l}
\frac{1}{n} \leq |x| \leq (\forall x)\, n \Delta \\
\frac{1}{n} \leq |x| \leq (\forall x)\, n \Delta
\end{array} \right\} = (\forall x)\, n
\]
Hence \( x \) exists and \( (\forall x)\, \Delta \) is a convergent sequence.

By the observation in (II) we have \( (\forall x)\, (\forall x) \equiv 0 \forall x \not\equiv 0 \forall x \). We want
\[
\{ \forall x \mid (\forall x) \not\equiv 0 \} = \emptyset
\]

Due to the initial step we can now define

(III) \( \exists x \) \not\equiv 0 \forall x (\forall x) \not\equiv 0 \forall x \) and \( (\forall x) \not\equiv 0 \forall x \). Since the assumptions are made on \( x \) and \( (\forall x) \not\equiv 0 \forall x \) but \( (\forall x) \not\equiv 0 \forall x \) and (III) \( \exists x \) \not\equiv 0 \forall x (\forall x) \not\equiv 0 \forall x \). By the boundary condition there is a sequence \( x \) for which (III) \( \exists x \) \not\equiv 0 \forall x (\forall x) \not\equiv 0 \forall x \). By Lemma 1 we can deduce from (III) \( \exists x \) \not\equiv 0 \forall x (\forall x) \not\equiv 0 \forall x \). For \( x \) as in (I) with \( (\forall x) \not\equiv 0 \forall x \) we want to establish the inequality
\[
(\forall x) n^2 \not\equiv (\forall x) n^2
\]

where \( c = 0 \) are bounded functions by the Lipschitz continuity of \( \Delta \).

(T) \( n c + m|q| n + m n \leq c n + m|q| n + m n \leq 0 \)

defines the above differential inequality. With these definitions and the above differential inequality (T) which is supposed to be zero if the denominator is zero. With these
\[
\frac{n - x}{n - (a \Delta n x)} = (x)^p
\]
\[
\frac{n - x}{n - (a \Delta a x)} = (x)^p
\]
define

Next we have
\[
(\forall x) n \geq (\forall x) n
\]
and the assumption (II) \( \exists x \) \not\equiv 0 \forall x (\forall x) \not\equiv 0 \forall x \) follows.

(II) \( \forall x \)
\[
(\forall x) \not\equiv 0 \forall x
\]
\[
(\forall x) \not\equiv 0 \forall x
\]
\[
(\forall x) \not\equiv 0 \forall x
\]
\[
(\forall x) \not\equiv 0 \forall x
\]
Hence we find
\[
(\forall x) \not\equiv 0 \forall x
\]
On every \( A \), the values of \( u \) are strictly between the values of \( \mathcal{A} \), so that is to say the union of \( \mathcal{A} \) and the symmetric difference of \( \mathcal{A} \) with \( \mathcal{A} \) is the union of \( \mathcal{A} \). Theorem 1.1 is then a special case of Corollary 1.3. We will show that \( A \) has no continuation for \( \mathcal{A} \), where \( \mathcal{A} \) is a symmetric difference of \( \mathcal{A} \) with \( \mathcal{A} \).

Proof: Let us denote the set of points of local extremum of \( \mathcal{A} \).

Idea of MIN.

Remark: It follows from the proof that the above theorem is also true for the radial symmetrical.

(1)
\[ Y = |x| \]
(2)
\[ Y = |x| \quad \text{and} \quad \mathcal{N} = \{ 1 \} \]
(3)
\[ Y = |x| \]
\[ \mathcal{N} = \{ 1 \} \]

Theorem 2 Let \( \mathcal{A} \) be a solution of (8) and suppose (b) holds. Then \( \mathcal{A} \) is Lipschitz continuous (and differentiable) in \( \mathcal{A} \) with respect to \( \mathcal{A} \).

Theorem 1 A characterization theorem for radial symmetry

Proof

\[ 0 > \psi(y, x, t) n \psi(x) \int_{x}^{t} \theta(x, t) \]

we have \( x \in \mathcal{A} \). Hence, by Proposition 1, there exists a ball of radius \( \mathcal{A} \) that contains \( x \). Since \( \mathcal{A} \) contains \( x \), there exists a neighborhood \( \mathcal{A} \) of \( x \) such that \( \int_{x}^{t} \theta(x, t) \) is not zero. Therefore, the function \( \theta(x, t) \) is integrable on \( \mathcal{A} \). Hence, by the weak version of the strong maximum principle, the solution \( \psi(x, t) \) is not constant on the smooth part of \( \mathcal{A} \). Because of the unipotential of \( \psi(x, t) \) on the right-hand side of the equation, we get that the symmetric difference of \( \mathcal{A} \) with \( \mathcal{A} \) is not zero.
2.1 The Problem and Some Old and New Results

Overdetermined BVPs in Finite Shaped Domains

Corollaries 1, 2 are then to be applied to a sequence of annuli which shrink to the origin. The same argument taken from the possible accumulation of the spheres $S(t)$ at $t = 0$, as $t \to 0$, by the uniqueness theorem 1.19. II. $n \equiv n$ is a bounded and we obtain the following differential equation on $\mathcal{V}$ with $\psi$ defined zero. By the corresponding eigenvalue is zero. By hypothesis on $f$

$$0 = \left(0^\infty \right) f - (x) n \Delta \circ (x) n f + (x) n \psi$$

$$\frac{1}{2} (0^\infty) f - (x) n \psi = (x) n \psi$$

$$\frac{1}{2} (0^\infty) f - (x) n \psi = (x) n \psi$$

By the definition of the second derivative and

Hence to the proof of Theorem 1

$$0 = \frac{1}{x - (y)^2} \left( \frac{x - (y)^2}{x - (y)^2} \right)_{x = y} = (x) n \psi$$

Since the non-negativity is independent of $x$ one of the Corollaries I applies.
Theorem 2: If \( f \) is \( \in \mathbb{C}^2 \) with \( \Delta f = 0 \) on \( \partial \Omega \) where \( \Omega \) is a bounded domain in \( \mathbb{R}^n \). Then \( f \) is harmonic outside \( \Omega \).

Proof: Consider the Laplace equation in \( \mathbb{R}^n \).

Remark: The following theorem provides a characterization of harmonic functions.

Theorem 3: A real-valued function \( f \) is harmonic in \( \mathbb{R}^n \) if and only if it satisfies Laplace's equation, \( \Delta f = 0 \).

Proof: The proof follows from the definition of harmonicity and the properties of harmonic functions.

Definition: Let \( \Omega \) be a bounded, connected domain in \( \mathbb{R}^n \). If \( \Delta \Omega = \emptyset \) or \( \Omega = \mathbb{R}^n \), then \( \Omega \) is called a ring-shaped domain.
\[ \{ t | t \geq 0 \} \cup \{ x \in \Gamma^0 \cup \Gamma \} \cup \{ y \in \mathbb{R}^d \} \]

Furthermore, let \( (\mathbb{R}^d, \mathcal{A}, \mu) \) be the reflection of \( x \), and let \( \mathcal{A} \) denote the hyperplane and \( \Gamma^0 \) denote the inner cap. The outer cap is defined by \( \Gamma \). Let \( (\mathbb{R}^d, \mathcal{A}, \mu) \) be the reflection of \( x \) with respect to \( \mathcal{A} \).

In order to prove radial symmetry, we consider the problem in all directions.

### 2.2 Definition of Right Hand Caps

In the differential equation and by supposing the inner boundary to be convex, \( \Gamma \) is the existence of a saddle point which is unique by the hypothesis. \( \Gamma \) shows that a violation of \( \Gamma \) results in the existence of a saddle point which is unique by the hypothesis. \( \Gamma \) shows that a violation of \( \Gamma \) results in the existence of a saddle point which is unique by the hypothesis. \( \Gamma \) shows that a violation of \( \Gamma \) results in the existence of a saddle point which is unique by the hypothesis. \( \Gamma \) shows that a violation of \( \Gamma \) results in the existence of a saddle point which is unique by the hypothesis.

### 2.3 Proposition for Elliptic Equations

(1) A generalization of earlier works of Pao and Philippin [12] recently yields

(2) A generalization of earlier works of Pao and Philippin [12] recently yields

### Particular Problems

Some results related to the problem are known to the author. It is important to say that in these works condition (1.4) is not supposed a priori but deduced for the results to hold. In those works condition (1.4) is not supposed a priori but deduced for the results to hold.

Quick look at (1.6) of Proposition 2 will convince the reader.

It is well known (see Chapter II) that the relaxed condition on \( \Gamma \) is satisfied if the domains are connected and bounded. However, the reduced right hand caps is well understood, we could not find a proof. In the annulus case Lemma 1 showed that one can reach \( \Gamma \) from the right by points on the convexity of the right hand caps is well understood, we could not find a proof. In the annulus case Lemma 1 showed that one can reach \( \Gamma \) from the right by points on the convexity of the right hand caps is well understood, we could not find a proof. In the annulus case Lemma 1 showed that one can reach \( \Gamma \) from the right by points on the convexity of the right hand caps is well understood, we could not find a proof. In the annulus case Lemma 1 showed that one can reach \( \Gamma \) from the right by points on the convexity of the right hand caps is well understood, we could not find a proof.
Proposition 2. Let $u$ be a solution of $(1.1)-(1.4)$. For $x \in \partial \Omega$, let $m \in \partial \Omega$ be an inward normal at $x$, and $\mathbf{u} \cdot m$.

Proof: See Appendix.

Lemma 2. Suppose $D$ is an $\Omega$-domain, and $u \in C^2(D)$. Let $x \in \partial \Omega$. Suppose $m$ is a non-tangential vector to $D$ at $x$, and $m \cdot m = 0$. Then, the normal derivative of $u$ at $x$ does not change if $m$ is replaced by another non-tangential vector in the same direction.

Boundary data at $\partial \Omega$. In particular, Proposition 1 will be included.

We start our analysis with the investigation of the behavior of $u$ near the boundary.

3.3 Proof of Theorem 3

\begin{equation}
(\mathbf{u} \cdot m)(z) = 0 = (z)u \cdot m \quad \text{on} \quad \partial \Omega.
\end{equation}

Let $\mathbf{u} \cdot m$ be defined on the compositions function $u \circ \mathbf{u}$. The definition of the reduced right-hand side of the differential equation.

The boundary orbit for $A$ is then $(\mathbf{u} \cdot m)(x)$. We denote this critical value of $A$ by $m$ and set $A = \max \{(\mathbf{u} \cdot m)(x) : x \in \partial \Omega \cup \{A\}\}$. The equation becomes dependent on the $x$-direction at a point $A$ where this orbit becomes dependent on the $x$-direction. That is, the orbit is equal to the composition of $\mathbf{u}$ and $x$.

Lemma 2. For values of $A$ that for values of $A$ is the composition of $\mathbf{u}$ and $x$, the reduction of $A$ is $A$.

For the geometry of right-hand caps, it is well known (see Antich and Pretorius) [2].

![Diagrams showing types of domains and normal vectors](attachment:image.png)
With these preliminary considerations in hand we can now prove Theorem 3. Our

\[
\forall \mathbf{u} \in \mathbf{u} \quad 0 < (\nabla \cdot \mathbf{u}) + \mathbf{u}^2
\]

and hence, this is seen before in the continuation step, we have to write (16). in

Remark: To include Proposition 2 in Proposition 1 we have to write (16) in

\[
(0 \nabla) f - (n \nabla) f + n \nabla \geq 0
\]

0 \geq 0 \nabla

Hence we have a contradiction to our assumption. This shows that case I can

\[
(0 \nabla) f - (n \nabla) f + n \nabla \geq 0
\]

Continuity of \( f \) satisfies that \( n \nabla \geq n \nabla \) and \( n \nabla \geq n \nabla \) since \( n \nabla \geq n \nabla \). By the Lipschitz

\[
(0 \nabla) f - (n \nabla) f + n \nabla \geq 0
\]

\[
(0 \nabla) f - (n \nabla) f + n \nabla \geq 0
\]
By the initial step the following quantity is well defined

\[
\{x, y \in \mathbb{Z} \mid x < y \} = \mathbb{R}
\]

Suppose for contradiction on \( a \) that is impossible for \( w \).

If we can exclude on a component from \( \mathbb{Z} \) that \( \forall x \in \mathbb{Z} \), so we deduce from \( \forall x \in \mathbb{Z} \). So we apply the strong maximization principle to a component of \( \mathbb{Z} \).

\[
(\forall x \in \mathbb{Z} \exists y \in \mathbb{Z} \exists z \in \mathbb{Z} : y < z)
\]

By the assumption on \( a \) we have \( 0 = n \) and \( x \). This implies \( \forall x \in \mathbb{Z} \exists y \in \mathbb{Z} \exists z \in \mathbb{Z} = \mathbb{Z} \).

By the assumption on \( a \) we have \( 0 = n \) and \( x \). This implies \( \forall x \in \mathbb{Z} \exists y \in \mathbb{Z} \exists z \in \mathbb{Z} = \mathbb{Z} \).

Suppose \( w \in \mathbb{Z} \). The appendix will show that this implies \( \forall x \in \mathbb{Z} \exists y \in \mathbb{Z} \exists z \in \mathbb{Z} = \mathbb{Z} \).

Next we show, that is the desired

\[
\mathbb{Z} \ni 0 \ni x \ni y \ni z \ni \mathbb{Z}
\]

For such \( a \) there are bounded functions \( \phi \), \( \psi \) such that

\[
\phi(x) = \psi(x) + (x) \ni 0 \ni x \ni y \ni z \ni \mathbb{Z}
\]

Some parts of the proof, which are very much like in the

annulus-case, we only sketch.

Let us start with the initial step. We consider the compact set \( \mathbb{Z} \) of all points

\[
\mathbb{Z} \ni 0 \ni x \ni y \ni z \ni \mathbb{Z}
\]

and finally we shall show
a contradiction. This shows that the condition \( z \neq 0 \) and finishes the contradiction step.

If \( \phi \) is not smooth, then there is no component \( Z \) in the vicinity of \( x \) that is one point in particular. So we have the following condition: \( w \neq 0 \) and finishes the condition.

In this final step, the different Neumann conditions will come together. Hence \( z \neq 0 \) and finishes the condition.

The flow of the argument is: If \( \phi \) is not smooth, then there is no component \( Z \) in the vicinity of \( x \) that is one point in particular. So we have the following condition: \( w \neq 0 \) and finishes the condition.
since it is a point on the hyperplane where $\xi$ and its reflected point coincide. Also

Let us now collect our results for the derivatives of $0$ at $\xi = 0$. Notice that all first

\begin{align}
(61) & \quad I - u^I = I. \\
(61) & \quad I - u^I = I. \\
(61) & \quad I - u^I = I. \\
(61) & \quad I - u^I = I. \\
(61) & \quad I - u^I = I. \\
(61) & \quad I - u^I = I.
\end{align}

and evaluation at $0 = \xi$ results in $0 = \xi$

\[
\frac{\xi (1 + \varepsilon |\delta \Delta|)}{\xi (|\delta \Delta|)} \cdot \text{const} = \delta_{\xi} \frac{\xi u^{\xi} + \xi \eta^{\eta} + \xi \delta^{\delta} \delta^{\delta} u^{\eta} + \xi \delta^{\delta} \delta^{\delta} \eta^{\eta}}{\xi (|\delta \Delta|)}
\]

\[
0 = \xi \frac{u^{\xi} + \eta^{\eta}}{\xi (|\delta \Delta|)}
\]

Differential w.r.t. $\xi$ for $I - u^I = I$. Givens (we use summation convention for

\[
\xi (1 + \varepsilon |\delta \Delta|) \cdot \text{const} = (\varepsilon |\delta \Delta|) u^{\xi} + (\eta |\delta \Delta|) \eta^{\eta} \sum_{n=1}^{\infty} \frac{1}{(1 - u)^n}
\]

and with help of the parameterization of $\theta$, we find

\[
The Dirichlet and Neumann boundary conditions now read
\]

\[
\begin{align}
(\xi^I, \varepsilon |\delta \Delta|) u - (\eta^I, \varepsilon |\delta \Delta|) \eta &= (\xi^I) \partial_t \\
(\xi^I, \varepsilon |\delta \Delta|) \eta - (\eta^I, \varepsilon |\delta \Delta|) u &= (\eta^I) \partial_t
\end{align}
\]

and the relations

\[
(\xi^I x) n = (\xi^I) \partial_t \\
(\xi^I x) n = (\xi^I) \partial_t
\]

The face that the inward normal at $d = x$ is of the form $\xi^I$, and that means that $\xi^I = (0 |\delta \Delta)$.

The point $d$ corresponds to $\xi = 0$. Since the $\xi$-co-ordinates we introduce new

\[
\xi (1 + \varepsilon |\delta \Delta|) = (\xi^I) \partial_t
\]

and the inward normal at $d$ is of the form $(\xi^I) \partial_t$ and $(\eta^I) \partial_t$. This means that

\[
\varepsilon \in \delta \\
(\xi^I) \delta = (1 - u^I, \varepsilon |\delta \Delta|) \delta = \xi^I
\]

Frame $\xi^I$ is locally expressed by
\[ \frac{\partial^2 \phi}{\partial \theta^2} \nabla u \cdot \nabla w + \frac{\partial^2 \psi}{\partial \theta^2} \nabla \phi \cdot w \nabla \phi + \frac{\partial^2 \phi}{\partial \theta^2} \nabla \phi \cdot \nabla \phi = \frac{\partial^2 \phi}{\partial \theta^2} \nabla \phi \cdot \nabla \phi \]

In the following expression we use summation convention for \( i,j \). Let \( n \) denote the unit normal vector, \( \nabla \) denote the gradient, \( \Delta \) denote the Laplacian, and \( \nabla \phi \) denote the gradient of \( \phi \). Hence, the second term on the right-hand side of the above equation is calculated by summing the second derivatives with respect to \( \phi \) and \( \psi \) in the gradient, \( \nabla \phi \cdot \nabla \psi \).

Therefore, \( \nabla \psi \cdot \nabla \phi = 0 \). Therefore, \( \Delta \phi \cdot \nabla \phi \) can be calculated by \( \Delta \phi \cdot \nabla \phi = \nabla \cdot (\nabla \phi \otimes \nabla \phi) = 0 \) for the non-negative direction of \( \nabla \phi \).

The following lemma is a corollary of the above result.

**Proof of Lemma 2**: Since \( u = c \), locally around \( z \) on \( \partial \Omega \) it follows that every point \( z \) in \( \partial \Omega \) is a critical point of \( \phi \).

**Appendix**

This finishes the proof of Theorem 3.

Therefore, we have a second order zero at \( \partial \Omega \) in contradiction to Serre's corner. Since also \( d < 0 \) by our assumption we see that this is only possible if \( \partial \Omega \) is empty.

For \( r > 0 \) let \( (\phi, \psi) \) be the solution to the above problem for \( d > 0 \) and \( r < 0 \). Then we have that \( d > 0 \) and \( r < 0 \) for small perturbations.

Since the normal to \( \partial \Omega \) at \( d \) is parallel to \( d \) we can replace \( d \) by \( d \) in the above equation.

With the inner normal at \( d \) and \( r \) in the above equation.

\[ \frac{I + \phi' \phi}{I} = (\phi, \psi) \cos \frac{d}{r} \]

The point \( d \) is contained in a straight line through the origin, which has the angle \( \phi' \phi \). The point \( d \) is contained in the line \( d \) where the point \( \phi' \phi \) lies.

Let \( \{ z \} \in P \) and define \( u \) to be any \( z \).

\[ (\phi, \psi) = \phi' \phi \]

This by the following Taylor expansion of

\[ (\phi, \psi) = \sum_{u} \phi' \phi \]

To obtain our contradiction to Serre's version of the boundary point lemma we need

\[ \Delta \psi = 0 \]

We do not have a second order zero at \( \partial \Omega \) for \( d > 0 \). We do not have a second order zero at \( \partial \Omega \) for \( d < 0 \). We do not have a second order zero at \( \partial \Omega \) for \( d < 0 \) and \( r < 0 \).

\[ u \cdots \cdot \zeta = \phi' \phi \]

For \( \Delta \psi = 0 \) for \( \theta' \phi \) and\( u \cdots \cdot \zeta = \phi' \phi \).
Clearly, we can use a ball $B'_2$ to define $X$. Since $X$ is open and $U$ connected, let us show the openness of $U$. By the openness of $U$, we find $x \in X \subset U \cup Z \theta$. Since $X$ is a subset of the interior of $Z \theta$, $Z \theta \cap X$ is open. Then, it is easy to calculate

$$\forall x \in U \cup Z \theta \setminus (U \cup Z \theta) \cap (Z \theta \cap Z) = X$$

and show that $X$ is open. Then, we have

$$0 < (\partial)_{n \cdot u} \frac{\tau}{\theta} \quad \text{or} \quad 0 < (\partial)_{n \cdot u} \frac{\tau}{\theta}$$

The non-Lipschitz function $u \in (\partial)_{n \cdot u}$ in $D$ and $\forall \theta \in (\partial)_{n \cdot u} + n u \parallel q + n v$.

Hence the result:

$$(z)_{n \cdot u} \theta \parallel (z)_{n \cdot u} \theta = (z)_{n \cdot u} \theta \parallel (z)_{n \cdot u} \theta = (z)_{n \cdot u} \theta \parallel (z)_{n \cdot u} \theta$$

We apply this operator to $v$ and evaluate at $z$. Observe that $u$ constant on $D \theta$ implies $D \theta$.

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