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□□□□ 1
□□ 1
□ $\mathbb{R}^{2n}$ □□□ 1
□□□□ 1
□□□□ 2
Hartogs □□ 2
Reinhardt □ 3

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□□

□ $n \in \mathbb{N}^+$□□□ n □□□□□□□□□□ n □□□□□

$$\mathbb{C}^n = \{z : z = (z_1, z_2, \cdots, z_n), z_j \in \mathbb{C}, 1 \le j \le n\},$$

□□□□□ n □□□□□□□$\mathbb{C}^n$ □□□□ **Hermite** □□□

$$\langle a, b \rangle = \sum_{j=1}^{n} a_j \overline{b_j}, \quad a, b \in \mathbb{C}^n,$$

□□□□□□□ $\|a\| = \langle a, a \rangle$ □□□□ $\mathbb{C}^n$ □□□□□

$$\operatorname{dist}(a, b) = \|a - b\|, \quad \forall a, b \in \mathbb{C}^n.$$

□□□□□□□ $|z| = z\overline{z}$ □□□□□□□ $z \in \mathbb{C}^n$□□□ $|z| = \|z\|$□

□ $\mathbb{R}^{2n}$ □□□

□□□ $a \in \mathbb{C}^n$ □□□□$r > 0$ □□□□□□

$$B(a, r) = \{z \in \mathbb{C}^n : |z - a| < r\}.$$

□ $z = (z_1, z_2, \cdots, z_n) \in \mathbb{C}^n$□□ $z_j = x_j + i x_{j+n}, x_j, x_{j+n} \in \mathbb{R}$□□□□

$$f : \mathbb{C}^n \to \mathbb{R}^{2n}, \quad f(z) = (x_1, \cdots, x_{2n})$$

□ $\mathbb{C}^n$ □ $\mathbb{R}^{2n}$ □□□□□□□□□ $\mathbb{R}^{2n}$ □□ L-2 □□□ $|f(z)|_2 = |z|$□□□ $f(B(a, r))$ □ $\mathbb{R}^{2n}$ □□ $f(a) \in \mathbb{R}^n$ □□□□$r > 0$ □□□□□□□ $\mathbb{C}^n$ □ $\mathbb{R}^{2n}$ □□□□□

□□□□ $\mathbb{R}^{2n}$ □□□□□□□□□□□□ $\mathbb{C}^n$ □□

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□□ □ $D \subset \mathbb{C}^n$ □□□□□□ $\forall a \in D$□$\exists r > 0$□□□ $B(a, r) \subset D$□□□ D □□□□

□□□ □ $D \subset \mathbb{C}^n$ □□□□□ D □□□□□□□□□□□□□ D □□□□□

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□□□□□ □ $\Omega \subset D$ □□□□□□□□ $\overline{\Omega} \subset D$□□□ Ω □ D □□□□□□□□□□ $\Omega \subset\subset D$□

□□□ □□□ $a = (a_1, \cdots, a_n) \in \mathbb{C}^n$ □□□□$r = (r_1, \cdots, r_n)(r_j > 0, 1 \le j \le n)$ □□□□□□□□□□□

$$P(a, r) = \{z \in \mathbb{C}^n : |z_j - a_j| < r_j, 1 \le j \le n\},$$

□□ $\mathbb{C}$ □ n □□□□□□□□□□

□□□ □□□□□ n □□□□□□ $D_j \in \mathbb{C}(1 \le j \le n)$ □□□□□ $D = D_1 \times \cdots \times D_n$ □□□□□□

[illegible] $A \subset \mathbb{C}^n$ [illegible] $\mathfrak{b}A$

[illegible]

[illegible] $\tau : \mathbb{C}^n \to \mathbb{R}^n_+, f(a) = f((a_1, \cdots, d_n)) = (|a_1|, \cdots, |a_n|)$ [illegible]$\mathbb{C}^n$ [illegible]

[illegible] $\tau(B(0,r))$ [illegible] $\tau(P(0,(r_1,r_2)))$ [illegible]

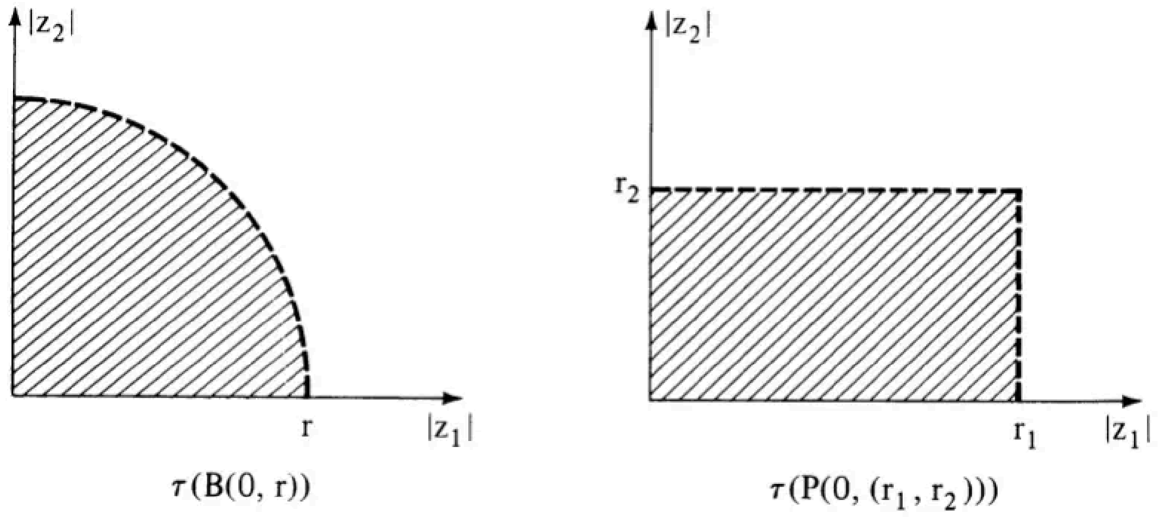

Figure 1. Representations of ball and polydisc in absolute space.

Hartogs [illegible]

[illegible] $n > 2$ [illegible] $z = (z', z_n)$[illegible] $z' = (z_1, \cdots, z_{n-1}) \in \mathbb{C}^{n-1}$[illegible]

[illegible] $r = (r_1, \cdots, r_n)$ [illegible] $0 < r_j < 1, 1 \le j \le n$[illegible]

$$H(r) = \{z = (z', z_n) \in \mathbb{C}^n : z' \in P'(0, r'), |z_n| < 1\} \\ \cup \{z = (z', z_n) \in \mathbb{C}^n : z' \in P'(0, r'), r_n < |z_n| < 1\}$$

[illegible] $(H(r), P(0,1))$ [illegible]**Hartogs** [illegible]

$H(r)$ [illegible]

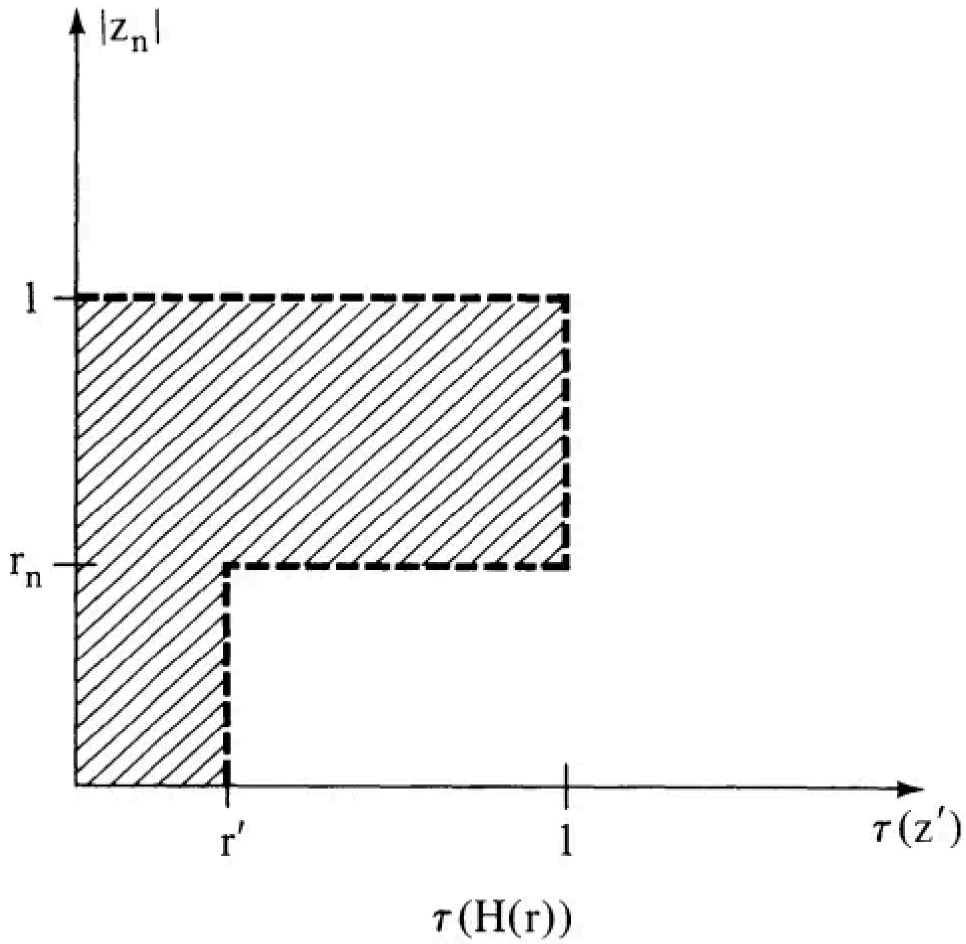

Figure 2. Representation of $H(r)$ in absolute space.

Reinhardt [illegible]

[illegible] $r = (r_1, \cdots, r_n) \in \mathbb{R}_+^n$ [illegible]

$$\tau^{-1}(r) = \left\{ \left(r_1 e^{i\theta_1}, \cdots, r_n e^{i\theta_n} \right) : 0 \le \theta_j \le 2\pi, 1 \le j \le n \right\}$$

[illegible] n [illegible] n [illegible]

[illegible] $\Omega \subset \mathbb{C}^n$ [illegible] $\forall a \in \Omega$ [illegible]

$$\tau^{-1}(\tau(a)) = \left\{ z \in \mathbb{C}^n : z = \left(a_1 e^{i\theta_1}, \cdots, a_n e^{i\theta_n} \right), 0 \le \theta_j \le 2\pi, 1 \le j \le n \right\}$$

[illegible] Ω [illegible] Ω [illegible] $\mathbb{C}^n$ [illegible]

[illegible] $\Omega \subset \mathbb{C}^n$ [illegible] Ω [illegible] **Reinhardt** [illegible] Ω [illegible] $\forall a \in \Omega$ [illegible] $P(0, \tau(a)) \subset \Omega$ [illegible] Ω [illegible] $B(0, r)$ [illegible] $P(0, r)$ [illegible] Reinhardt [illegible] $H(r)$ [illegible] Reinhardt [illegible]

[illegible] Reinhardt [illegible] $\mathbb{C}$ [illegible] Reinhardt [illegible] Reinhardt [illegible]