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Erratum to "Proper holomorphic mappings in the special class of Reinhardt domains"

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Let $D_\gamma := \{z \in \mathbb{C}^2 : |z_1|\,|z_2|^\gamma < 1\}$, $\gamma \in \mathbb{R}$. In Theorem 3 the description of the proper holomorphic mappings between D_α and D_β for $\alpha, \beta \in \mathbb{R} \setminus \mathbb{Q}$, $\alpha < 0$, $\beta < 0$ is missing. Moreover, the formulation in the case when $\alpha, \beta > 0$ is incorrect.

Here is the correct formulation of the theorem.

Theorem 3. *Let $\alpha, \beta \in \mathbb{R} \setminus \mathbb{Q}$.*

(a) *If $\alpha, \beta > 0$, then the set $\mathrm{Prop}(D_\alpha, D_\beta)$ is non-empty if and only if $\alpha\beta \in \mathbb{Q}$ or $\alpha/\beta \in \mathbb{Q}$. Moreover, all proper holomorphic maps between D_α and D_β are of the form*

  (i) *$(z_1, z_2) \mapsto (az_1^k, bz_2^l)$, where $a, b \in \mathbb{C}_*$, $|a|\,|b|^\beta = 1$, and k, l are any positive integers satisfying $\alpha/\beta = l/k$ (clearly such mappings are understood to be defined if $\alpha/\beta \in \mathbb{Q}$), or*

  (ii) *$(z_1, z_2) \mapsto (az_2^k, bz_1^l)$, where $a, b \in \mathbb{C}_*$, $|a|\,|b|^\beta = 1$, and k, l are any positive integers satisfying $\alpha\beta = k/l$ (such mappings are understood to be defined if $\alpha\beta \in \mathbb{Q}$).*

(b) *If $\alpha, \beta < 0$, then the set $\mathrm{Prop}(D_\alpha, D_\beta)$ is non-empty if and only if $\alpha = p_1 + p_2\beta$ for some rational p_1, p_2. In this case all proper holomorphic maps between D_α and D_β are of the form*

$$(z_1, z_2) \mapsto (az_1^{k_1} z_2^{k_2}, bz_2^l),$$

where $a, b \in \mathbb{C}_*$, $|a|\,|b|^\beta = 1$, and k_1, k_2, l are any integers with $k_1 > 0$ satisfying $p_1 = k_2/k_1$, $p_2 = l/k_1$.

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(c) *If* $\alpha\beta < 0$, *then there is no proper holomorphic mapping between* D_α *and* D_β.

The proof remains valid, with only minor modifications.

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