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SOME PROPERTIES OF PSEUDO-CONFORMAL IMAGES OF REINHARDT CIRCULAR DOMAINS

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0. **Introduction.** A one-to-one mapping of a domain D of C^2 by a pair of analytic functions, say

$$T = [z_k^* = z_k^*(z_1, z_2), k = 1, 2], \tag{1}$$

onto another domain D^* is called a PCT (pseudo-conformal transformation). In contrast to the case of simply connected domains in the complex plane C, simply connected domains D in C^2 are as a rule not homogeneous. It is of interest in the theory of PCT's to determine and investigate the "*interior distinguished sets*"; i.e., sets possessing certain properties which in a PCT go over into sets having the same properties. As indicated in the previous papers [B.3], [B.7], [B.8], [B.9], [B.11], [B.12], the theory of the kernel function enables us to determine certain (absolute) invariants $J_D^{(\nu)}(z_1, z_2; \bar{z}_1, \bar{z}_2) \equiv J_D^{(\nu)}(z, \bar{z})$, $z = (z_1, z_2)$, i.e., functions which in a PCT T of D onto D^* go over into functions $J_{D^*}^{(\nu)}(z^*, \bar{z}^*)$, $z^* = (z_1^*, z_2^*)$, $\nu = 1, 2, \cdots$, which at the corresponding points z^* possess the same value as $J_D^{(\nu)}$ at z. There are many different methods to determine invariants of D. There arises, however, the problem of determining domains D, for which the invariant $J_D^{(\nu)}$ is constant throughout D. The second problem is to find domains for which two different invariants, say $J_D^{(\nu)}$ and $J_D^{(\mu)}$, $\nu \neq \mu$, are linearly independent. In the present paper we investigate these problems for Reinhardt circular domains R. (For simplicity sake we assume that the center of R is the origin O.)

REMARK. A domain which admits the group $z_k^* = z_k e^{i\varphi}$, $0 \leqq \varphi \leqq 2\pi$, $k = 1, 2$, of PCT's onto itself (automorphisms) is called a circular domain. See e.g., [B.-T., pp. 33–34]. A Reinhardt circular domain is a circular domain which admits the (two-parameter) group $z_k^* = z_k e^{i\varphi_k}$, $0 \leqq \varphi_k \leqq 2\pi$, of PCT's onto itself.

Since $J_R^{(\nu)}$ is an analytic function of $z_1, z_2, \bar{z}_1, \bar{z}_2$, we have a series development of $1/J_R^{(\nu)}$ at O in the form (9) of §1, see p. 426, and show

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