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Introduction of new coordinates to the Schottky space —The general case—

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0. Introduction.

In the previous paper [4], we introduced new coordinates to the Schottky space with respect to a standard system of loops Σ, and we defined the augmented Schottky space. As we shall explain in § 1, a standard system of loops is a special case of a basic system of loops.

In this paper, in § 2, we will introduce new coordinates to the Schottky space in the general case, namely, in the case where Σ is a basic system of loops. In § 3, by using these coordinates, we will define the augmented Schottky space in the general case. We will discuss, in § 4, relations between the augmented Schottky space and compact Riemann surfaces with or without nodes.

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1. Multi-suffix and examples.

1-1. Let S be a compact Riemann surface of genus $g \geqq 2$. If mutually disjoint simple loops on S, $\delta_1, \delta_2, \cdots, \delta_n$, have the following property, then we call $\Sigma = \{\delta_1, \delta_2, \cdots, \delta_n\}$ a *basic system of loops*: Each component of $S - \bigcup_{j=1}^{n} \delta_j$ (we call it a *cell*) is a sphere with three disks removed, that is, a planar and triply connected domain. We have $n = 3g-3$. If, in particular, the number of nondividing loops in Σ is equal to g, we call Σ a *standard system of loops* (see [4] pp. 155-157, more in detail).

Let $G^{(0)}$ be a fixed marked Schottky group generated by $A_1^{(0)}, A_2^{(0)}, \cdots, A_g^{(0)}$: $G^{(0)} = \langle A_1^{(0)}, A_2^{(0)}, \cdots, A_g^{(0)} \rangle$. Let $C_1, C_{g+1}; C_2, C_{g+2}; \cdots; C_g, C_{2g}$ be defining curves of $A_1^{(0)}, A_2^{(0)}, \cdots, A_g^{(0)}$, respectively, namely, they are mutually disjoint Jordan

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