ERRATUM // CONFORMAL BLOCKS FOR GALOIS COVERS OF ALGEBRAIC CURVES // (COMPOSITIO MATH. 159 (2023), 2191-2259)

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As pointed out by O. Gabber, Lemma 8.3 in the above mentioned paper was erroneous. The correct formulation of the lemma is given below. The proof of the new lemma can be derived from the same references given in the proof of loc. cit.

Let $(C_o, \vec{q}_o)$ be a s-pointed Γ-curve such that Γ acts stably on C_o. Let $\tilde{C}_o$ be the normalization of C_o at the points $\Gamma \cdot r$, where r is a (stable) nodal point of C_o. The nodal point r splits into two smooth points r', r'' in $\tilde{C}_o$. Let z' (resp. z'') be a local parameter at r' (resp. r'') for the curve $\tilde{C}_o$. The following lemma shows that there exists a canonical smoothing deformation of $(C_o, \vec{q}_o)$ over a formal disc $\mathbb{D}_\tau := \operatorname{Spec} \mathbb{C}[[\tau]]$. We denote by $\mathbb{D}_\tau^\times$ the associated punctured formal disc $\operatorname{Spec} \mathbb{C}((\tau))$.

Lemma 8.3. *With the same notation as above, we assume that the stabilizer group Γ_r at r is cyclic and does not exchange the branches. Then, there exists a formal deformation $(C, \vec{q})$ of the s-pointed Γ-curve $(C_o, \vec{q}_o)$ over a formal disc $\mathbb{D}_\tau$ with the formal parameter τ, such that the following properties hold:*

(1) over the closed point $o \in \mathbb{D}_\tau$, $(C, \vec{q})|_{\tau=0} = (C_o, \vec{q}_o)$;

(2) over the punctured formal disc $\mathbb{D}_\tau^\times$, $(C, \vec{q})|_{\mathbb{D}_\tau^\times}$ is a s-pointed smooth projective curve over $\mathbb{C}((\tau))$ if $\Gamma \cdot r$ are the only nodes in C_o;

(3) the completed local ring $\hat{\mathscr{O}}_{C,r}$ of $\mathscr{O}_C$ at r is isomorphic to $\mathbb{C}[[z', z'', \tau]]/\langle \tau - z'z'' \rangle \simeq \mathbb{C}[[z', z'']]$, where Γ_r acts on z' (resp. z'') via a primitive character χ (resp. χ^{-1});

(4) there exists a Γ-equivariant isomorphism of $\mathbb{C}[[\tau]]$-algebras

$$\kappa : \hat{\mathscr{O}}_{C\backslash\Gamma\cdot r, C_o\backslash\Gamma\cdot r} \simeq \mathscr{O}_{C_o\backslash\Gamma\cdot r}[[\tau]], \tag{1}$$

where $\hat{\mathscr{O}}_{C\backslash\Gamma\cdot r, C_o\backslash\Gamma\cdot r}$ is the completion of $\mathscr{O}_{C\backslash\Gamma\cdot r}$ along $C_o\backslash\Gamma \cdot r$.

• *On page 2239, the lines 10–12 from the top should be replaced by the following:*

Let θ', θ'' be the maps defined via Lemma 8.3 Part (3),

$$\theta' : \hat{\mathscr{O}}_{C,r} \to \mathbb{C}((z'))[[\tau]], \text{ and } \theta'' : \hat{\mathscr{O}}_{C,r} \to \mathbb{C}((z''))[[\tau]],$$

where $\hat{\mathscr{O}}_{C,r}$ is the completion of $\mathscr{O}_C$ along r.

• *On page 2240, the lines 11–12 from the top should be replaced by the following:*

Consider the following canonical homomorphisms (obtained by restrictions):

$$\mathscr{O}_{C\backslash\Gamma\cdot\vec{q}} \to \mathscr{O}_{C\backslash\Gamma\cdot(\vec{q}\cup\{r\})} \to \hat{\mathscr{O}}_{C\backslash\Gamma\cdot(\vec{q}\cup\{r\}), C_o\backslash\Gamma\cdot(\vec{q}_o\cup\{r\})} \overset{\kappa'}{\cong} \mathscr{O}_{C_o\backslash\Gamma\cdot(\vec{q}_o\cup\{r\})}[[\tau]],$$

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