Chapter 7

Examples

In this section we provide examples of the properties of $\mathcal{T}_3^+(S_{g,n})$ discussed throughout this paper. As usual, we denote by $S_{g,n}$ the oriented surface of genus g with n punctures, and we fix an ideal triangulation of $S_{g,n}$, whose set of oriented edges is $\underline{E}$ and whose set of triangles is $\triangle$.

7.1 The once-punctured torus

Let $S_{1,1}$ as depicted by the ideal triangulation T as in Figure 7.1. We remark that opposite edges of the rectangle are identified hence they display the same edge ratios.

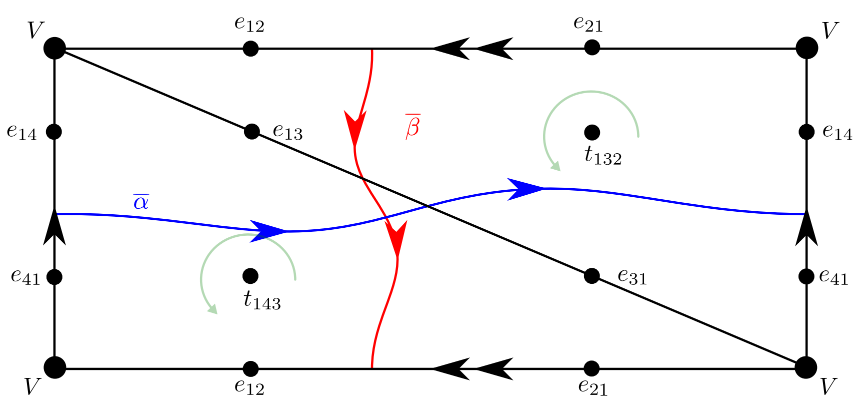

Figure 7.1: An ideal triangulation of $S_{1,1}$ with a single ideal vertex V.

Fock and Goncharov's Theorem 4.4.1 shows that the assignment of triple ratios and edge ratios indicated in Figure 7.1 uniquely determines an element of

$$\mathcal{T}_3^+(S_{1,1}) \cong \mathbb{R}_{>0}^{\triangle \cup \underline{E}} \cong \mathbb{R}_{>0}^8.$$

Moreover we can read off information about the corresponding holonomy group Γ with knowledge of the edge ratios and triple ratios alone using the method of §5.2.2. Let $\overline{\alpha}, \overline{\beta}$ be the generators of $\pi_1(S_{1,1})$ depicted in Figure 7.1. We denote by α and β a choice of holonomies of $\overline{\alpha}$ and $\overline{\beta}$ respectively. The method of §5.2.2 determines