

**Imayoshi, Yoichi; Nogi, Toshihiro****A remark on holomorphic sections of certain holomorphic families of Riemann surfaces.**(English) [Zbl 1115.32008](#)

Wang, Yuefei (ed.) et al., Complex analysis and applications. Proceedings of the 13th international conference on finite or infinite dimensional complex analysis and applications, Shantou University, Shantou, China, August 8–12, 2005. Hackensack, NJ: World Scientific (ISBN 981-256-868-9/hbk). 101-108 (2006).

In this paper, the author studies a special holomorphic family  $(M, \pi, R)$  of closed Riemann surfaces of genus two over a four-punctured torus  $R$ , which is a kind of Kodaira surface in the sense of *K. Kodaira* [*J. Anal. Math.* 19, 207–215 (1967; [Zbl 0172.37901](#))]. This family has been previously considered by *G. Riera* [*Duke Math. J.* 44, 291–304 (1977; [Zbl 0361.32014](#))]. The author gives two explicit equations that define this family, that involve elliptic functions, and he shows that there are exactly two holomorphic sections of this family, which he determines explicitly.

For the entire collection see [\[Zbl 1097.32001\]](#).

Reviewer: [Athanasios Papadopoulos \(Strasbourg\)](#)

**MSC:**

- [32G15](#) Moduli of Riemann surfaces, Teichmüller theory (complex-analytic aspects in several variables)
- [14H15](#) Families, moduli of curves (analytic)
- [11G30](#) Curves of arbitrary genus or genus  $\neq 1$  over global fields
- [30F60](#) Teichmüller theory for Riemann surfaces

**Keywords:**

[holomorphic family](#); [function field](#); [Kodaira surface](#); [Teichmüller space](#); [Diophantine equation](#); [Riemann surfaces](#); [holomorphic section](#)