

**Kuwata, Masato; Shioda, Tetsuji****Elliptic parameters and defining equations for elliptic fibrations on a Kummer surface.**(English) [Zbl 1139.14032](#)

Konno, Kazuhiro (ed.) et al., Algebraic geometry in East Asia—Hanoi 2005. Proceedings of the 2nd international conference on algebraic geometry in East Asia, Hanoi, Vietnam, October 10–14, 2005. Tokyo: Mathematical Society of Japan (ISBN 978-4-931469-45-7/hbk). Advanced Studies in Pure Mathematics 50, 177-215 (2008).

Let  $f : X \rightarrow \mathbb{P}^1$  be an elliptic fibration. Then  $f(x)$  defines a function  $u$  in the function field  $k(X)$ . This function  $u$  is called the elliptic parameter. The field  $k(X)$  is also the function field of an elliptic curve  $E/k(u)$ , hence  $u$  yields a Weierstrass equation for this fibration. The authors consider the problem given a  $K3$ -surface  $X$ , determine all (essentially different) elliptic parameters, i.e., find a Weierstrass equation for each elliptic fibration on  $X$ . The author solve this problem for the case that  $X$  is the Kummer surface of  $E \times F$  where  $E$  and  $F$  are non-isogenous elliptic curves and the ground field  $k$  equals  $\mathbb{C}$ . The proof uses the classification of possible elliptic fibrations on  $X$  (up to automorphism) by *K. Oguiso* [*J. Math. Soc. Japan* 41, No. 4, 651–680 (1989; [Zbl 0703.14024](#))]. However, the author does not provide explicit equations.

For the entire collection see [\[Zbl 1135.14003\]](#).

Reviewer: [Remke Kloosterman \(Hannover\)](#)

**MSC:**[14J28](#)  $K3$  surfaces and Enriques surfaces[14J27](#) Elliptic surfaces, elliptic or Calabi-Yau fibrations

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**Keywords:**[Kummer Surfaces](#); [elliptic fibrations](#)**Full Text:** [arXiv](#)