

## **Complex multiplication and K3 surfaces over finite fields**

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The zeta function of a K3 surface over a finite field satisfies a number of obvious (archimedean and  $l$ -adic) and a number of less obvious ( $p$ -adic) constraints. We consider the converse question, in the style of Honda-Tate: given a rational function  $Z$  satisfying all these constraints, does there exist a K3 surface whose zeta-function equals  $Z$ ? Reference: arXiv:1507.08547.