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Nils Bruin and **Kevin Doerksen*** (kdoerkse@gmail.com). *Genus 2 curves with (4,4)-split Jacobians.*

Split Jacobians are special. For genus 2 curves, they can be recognized from the fact that C is a degree n cover of an elliptic curve for some integer n . One can classify split Jacobians of genus 2 curves by these n . If $\psi : C \rightarrow E$ is a degree n cover then we say the Jacobian of C is (n, n) split.

In the talk, we consider the case $n = 4$. We classify all genus 2 curves whose Jacobians admit a polarized $(4, 4)$ -isogeny to a product of elliptic curves. In fact our result applies to the more general setting of principally-polarized abelian surfaces, and not just those surfaces which are Jacobians of some genus 2 curve. (Received September 21, 2011)