

1. Record Nr.	UNINA9910794334103321
Autore	Berger Lisa <1969->
Titolo	Explicit arithmetic of Jacobians of generalized Legendre curves over global function fields // Lisa Berger [and seven others]
Pubbl/distr/stampa	Providence, Rhode Island : , : American Mathematical Society, , [2020] ©2020
ISBN	1-4704-6253-2
Descrizione fisica	1 online resource (144 pages)
Collana	Memoirs of the American Mathematical Society ; ; Number 1295
Classificazione	11G1011G3011G4014G0514G2514K15
Disciplina	516.352
Soggetti	Curves, Algebraic Legendre's functions Rational points (Geometry) Birch-Swinnerton-Dyer conjecture Jacobians Abelian varieties Finite fields (Algebra)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Forthcoming, volume 266, number 1295."
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	The curve, explicit divisors, and relations -- Descent calculations -- Minimal regular model, local invariants, and domination by a product of curves -- Heights and the visible subgroup -- The L-function and the BSD conjecture -- Analysis of $J[p]$ and $NS(X_d)_{\text{tor}}$ -- Index of the visible subgroup and the Tate-Shafarevich group -- Monodromy of ℓ -torsion and decomposition of the Jacobian.
Sommario/riassunto	"We study the Jacobian J of the smooth projective curve C of genus $r-1$ with affine model $y^r = x^{r-1}(x+1)(x+t)$ over the function field $\mathbb{F}_p(t)$, when p is prime and r [greater than or equal to] 2 is an integer prime to p . When q is a power of p and d is a positive integer, we compute the L-function of J over $\mathbb{F}_q(t^{1/d})$ and show that the Birch and Swinnerton-Dyer conjecture holds for J over $\mathbb{F}_q(t^{1/d})$. When d is divisible by r and of the form $p^{\nu} + 1$, and $K_d := \mathbb{F}_p(\mu_d, t^{1/d})$, we write down explicit points in $J(K_d)$, show that they generate a subgroup V of rank $(r-1)(d-2)$ whose index in $J(K_d)$ is finite and a power of p , and show that the order of the Tate-Shafarevich group of J over K_d is $[J(K_d) : V]^2$. When $r > 2$,

we prove that the "new" part of J is isogenous over $F_p(t)$ to the square of a simple abelian variety of dimension $[\phi](r)/2$ with endomorphism algebra $\mathbb{Z}[\mu_r]^+$. For a prime with $p \nmid r$, we prove that $J(L) = \{0\}$ for any abelian extension L of $F_p(t)$ --
