1001-14-25 **Hiren Maharaj*** (`hmahara@clemson.edu`), Department of Mathematical Sciences, Clemson University, Clemson, SC 29634-0975. *Explicit Goppa code construction on fibre products of Kummer Covers.*

We show that Riemann-Roch spaces (and differential spaces) of divisors from fibre products of Kummer covers of the projective line, which are invariant with respect to the Galois group, decompose as a direct sum of Riemann-Roch spaces (and differential spaces) of divisors of the projective line. Consequently, one obtains explicit bases and therefore an exact formula for the dimension and good upper bounds for the minimum distance of the resulting Goppa codes. Riemann-Roch spaces together with differential spaces of divisors provide a convenient framework for studying duality of Goppa codes. We demonstrate that the generator matrices and parity check matrices of a large class of Goppa codes are easily constructed. (Received June 29, 2004)