

# Coefficients of higher powers of $r$ in Chiodo classes

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Let  $C/S$  be a family of curves, and  $L$  on  $C$  a line bundle. The double ramification (DR) cycle measures the locus  $D \subset S$  over which  $L$  is fibrewise trivial. To say the same thing another way, the restriction of  $L$  to  $C \times_S D$  is a pullback of some line bundle  $L'$  on  $D$ . Writing  $Z$  for the first Chern class of  $L'$ , we can consider a sequence of cycles  $DR^0, DR^1, DR^2, \dots$  on the moduli space of curves, defined by taking the product  $DR^i := Z^i DR$ . For  $i=0$  this recovers the usual DR cycle, for which a formula can be written by taking the coefficient of  $r^0$  in a certain polynomial in  $r$  constructed from Chiodo classes. We will show (under some annoying hypotheses, hopefully to be removed soon) that the cycle  $DR^i$  is the coefficient of  $r^i$  in the same expression with Chiodo classes. This is joint work with D. Chen, S. Grushevsky, M. Möller, and J. Schmitt.

**Orateur:** HOLMES, David