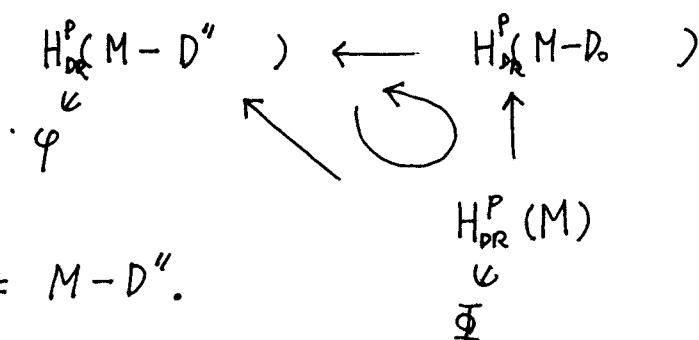


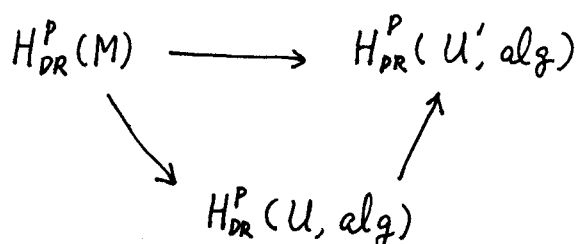
We may find a  $U'$  s.t.  $\varphi$  is holomorphic in  $U'$  and is the image of a class  $\Phi \in H_{DR}^p(M)$ .

Since  $\varphi$  is a differential of the second kind,  $\exists$  a divisor  $D_0$  s.t. if  $D' > D_0$ , then  $\varphi$  has no residues in  $M - D'$ . Consider  $D'' = D + D_0$ , where  $D$  is a divisor s.t.  $U = M - D$  is affine.  $\Rightarrow$  By the argument above,  $M - D''$  is also affine. Since  $\varphi$  is holomorphic in  $M - D_0$  and  $\varphi$  is the image of  $H_{DR}^p(M - D_0) \leftarrow H_{DR}^p(M)$ ,



Let  $U' = M - D''$ .

In the diagram



the restriction of  $\Phi$  to  $U$  will be represented by a closed  $p$ -form  $\eta$  that is meromorphic on  $M$  and holomorphic in  $U$ .

$\Gamma \quad \Phi|_U \in H_{DR}^p(U) \cong H_{DR}^p(U, alg)$

$\Rightarrow \Phi|_U - \eta = d\alpha$ ,  $\eta$  closed meromorphic  $p$ -form on  $M$  and holomorphic in  $U$ . ( $\alpha$  meromorphic  $(p-1)$ -form on  $M$  and holomorphic in  $U$ ).