

NEW HORIZONS IN MATHEMATICAL PHYSICS

$\chi(\Omega_{\Gamma_p}) = 2 \chi(M^*)$
 A point $y \in \Omega_{\Gamma_p}$ then we have
 $y = x + \sum t_v v_y$,
 $\sum t_v v_y = 0$,
 $(\sum t_v v_y, w_y) = 0$
 $d(\sum t_v v_y) = \sum (dt_v + \sum t_s w_{sv})$,
 $(\sum t_v v_y)(\sum t_v v_y)^* = \binom{n-1}{k} (\sum t_v v_y)(\sum d_{v,v} v_y)^{n-k-1} (\sum t_v h_{v,p} w_{vp})$
 $= \pm \frac{(n-1)!}{(n-k-1)!} (\sum t_v v_y)(\sum d_{v,v} v_y)^{n-k-1} \det(\sum t_v h_{v,p})$
 $= \pm (n-1)! \delta_{t,v} \det(\sum t_v h_{v,p}) w_{1,n-k-1} \dots w_{1,1}$
 $= \pm (n-1)! \delta_{t,v} \det(\sum t_v h_{v,p})$

$\Omega_{\Gamma_p} = \prod_{v=1}^n \Omega_{d_1, d_2, \dots, d_{n-k}}$
 $\Omega_{d_1, d_2, \dots, d_{n-k}} = \frac{1}{2\pi\sqrt{-1}} \int_M \sum \epsilon_{d_1, d_2, \dots, d_{n-k}}$
 $\Omega_{d_1, d_2, \dots, d_{n-k}} = \Omega_{d_1} \dots \Omega_{d_{n-k}}$



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