
$H_n\left(D_\alpha^n, \partial D_\alpha^n\right)$
∂
$\widetilde{H}_{n-1}\left(\partial D_\alpha^n\right)$
$\Delta_{\alpha\beta}$
$\widetilde{H}_{n-1}\left(S_\beta^{n-1}\right)$
$\Phi_{\alpha *}$
$\varphi_{\alpha *}$
$q_{\beta *}$
$H_n\left(X^n, X^{n-1}\right)$
∂_n
$\widetilde{H}_{n-1}\left(X^{n-1}\right)$
q_*
$\widetilde{H}_{n-1}\left(X^{n-1}/X^{n-2}\right)$
d_n
j_{n-1}
$\cong$
$H_{n-1}\left(X^{n-1}, X^{n-2}\right)$
$\cong$
$H_{n-1}\left(X^{n-2}/X^{n-2}, X^{n-2}/X^{n-2}\right)$