$\Rightarrow\ j : \mathcal{H}^q(\Omega^*)_p \longrightarrow \mathcal{H}^q(\mathcal{A}^*)_p$ is isomorphic. ⌟

Around $p \in D$ we consider nbds U as above. By the de Rham theorem for the (open) manifold $P^*(k,n)$

$$H^q_{DR}(U - U\cap D) \cong H^q(X^k S^1, \mathbb{C}) = \Lambda^q H^1(X^k S^1, \mathbb{C}),$$

and so the stalk

$$\mathcal{H}^q(\mathcal{A}^*(*D))_p \cong H^q(X^k S^1, \mathbb{C}).$$

⌜ $U - U\cap D \simeq X^k S^1$

$$\Rightarrow\ H^q_{DR}(U-U\cap D) \overset{\text{de Rham}}{\cong} H^q(U-U\cap D, \mathbb{C}) \cong H^q(X^k S^1, \mathbb{C})$$

$$H^1(X^k S^1, \mathbb{C}) = H^0(S^1, \mathbb{C}) \otimes H^1(X^{k-1}S^1, \mathbb{C}) \oplus H^1(S^1, \mathbb{C}) \otimes H^0(X^{k-1}S^1, \mathbb{C})$$

by Künneth formula

$$\Rightarrow\ H^1(X^k S^1, \mathbb{C}) = H^1(X^{k-1}S^1, \mathbb{C}) \oplus \mathbb{C} \cong \cdots \mathbb{C}\oplus\mathbb{C}\oplus H^1(X^{k-2}S^1, \mathbb{C})$$

$$= \cdots = \mathbb{C}^{k-1} \oplus H^1(S^1, \mathbb{C}) = \mathbb{C}^k$$

$$\Rightarrow\ \Lambda^q \mathbb{C}^k = \Lambda^q H^1(X^k S^1, \mathbb{C}) = \mathbb{C}^{\binom{k}{q}}$$

$$H^q(X^k S^1, \mathbb{C}) = \bigoplus_{i+j=q} H^i(S^1, \mathbb{C}) \otimes H^j(X^{k-1}S^1, \mathbb{C})$$

$$= \bigoplus_{i+j_1+j_2=q} H^i(S^1, \mathbb{C}) \otimes H^{j_1}(S^1, \mathbb{C}) \otimes H^{j_2}(X^{k-2}S^1, \mathbb{C})$$

$$\cdots = \bigoplus_{i_1+i_2+\cdots+i_k=q} H^{i_1}(S^1, \mathbb{C}) \otimes H^{i_2}(S^1, \mathbb{C}) \otimes \cdots \otimes H^{i_k}(S^1, \mathbb{C})$$

Since $H^i(S^1, \mathbb{C}) = \begin{cases} \mathbb{C}, & i = 0, 1 \\ 0, & \text{otherwise,} \end{cases}$

$H^q(X^k S^1, \mathbb{C}) = \mathbb{C}^{{}_kC_q}$ ($\because$ Choose q number of i's