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Now we may follow our cocycle ω through this sequence of isomorphisms. Beginning with

$$\omega_{n-1} = \left(\frac{1}{2\pi\sqrt{-1}}\right)^n \omega \in H^{n-1}(\mathcal{U}^*, Z_{\bar\partial}^{n,0}),$$

we let $\mathcal{U}_I = \cap_{i\in I} U_i$ and

$$\omega_p = \{\omega_{p,I} \in Z_{\bar\partial}^{n,n-p-1}(\mathcal{U}_I)\}_{\# I = p+1}$$

denote a representative of

$$i_{p+1} \circ \cdots i_{n-1}(\omega_{n-1});$$

and then let

$$\xi_p = \{\xi_{p,I} \in \mathcal{Q}^{n,n-p-1}(\mathcal{U}_I)\}_{\# I = p}$$

be cochains such that

$$\delta \xi_p = \omega_p, \quad \bar\partial \xi_p = \omega_{p-1}.$$

Γ $Z_{\bar\partial}^{n,0} = \Omega^n$, $\omega_{n-1} = \left(\frac{1}{2\pi\sqrt{-1}}\right)^n \omega \in H^{n-1}(\mathcal{U}^*, Z_{\bar\partial}^{n,0}) = H^{n-1}(\mathcal{U}^*, \Omega^n)$

$$H^{n-1}(\mathcal{U}^*, Z_{\bar\partial}^{n,0}) \xrightarrow{i_{n-1}} H^{n-2}(\mathcal{U}^*, Z_{\bar\partial}^{n,1}) \to \cdots \to H^{p+1}(\mathcal{U}^*, Z_{\bar\partial}^{n,n-p-2}) \xrightarrow{i_{p+1}} H^p(\mathcal{U}^*, Z_{\bar\partial}^{n,n-p-1})$$

$$\| $$

$$H^{n-1}(\mathcal{U}^*, \Omega^n) = H_{\bar\partial}^{n,n-1}(\mathcal{U}^*)$$

$$\begin{array}{ccc} H^{n-1}(\mathcal{U}^*, \Omega^n) = H^{n-1}(\mathcal{U}^*, Z_{\bar\partial}^{n,0}) & \xrightarrow{i_{p+1}\circ\cdots\circ i_{n-1}} & H^p(\mathcal{U}^*, Z_{\bar\partial}^{n,n-p-1}) \\ \omega_{n-1} & \longmapsto & i_{p+1}\circ\cdots\circ i_{n-1}(\omega_{n-1}) = \omega_p \end{array}$$

$\omega_p \in C^p(\underline{\mathcal{U}}^*, Z_{\bar\partial}^{n,n-p-1})$

$\Rightarrow \omega_{p,I} \in Z_{\bar\partial}^{n,n-p-1}(\mathcal{U}_I)$, $\mathcal{U}_I = \bigcap_{i\in I} U_i$

$$\begin{array}{ccccc} H^{p+1}(\mathcal{U}^*, Z_{\bar\partial}^{n,n-p-2}) & \xrightarrow{i_{p+1}} & H^p(\mathcal{U}^*, Z_{\bar\partial}^{n,n-p-1}) & \to & H^{p-1}(\mathcal{U}^*, Z_{\bar\partial}^{n,n-p}) \\ \omega_{p+1} & \longmapsto & \omega_p & \longmapsto & \omega_{p-1} \end{array}$$