

$$d_r: E_r^{p,q} \rightarrow E_r^{p+r, q-r+1}$$

again for all r . These assertions are clear from our proof of the spectral sequence using differential forms and also were verified in the little example above.

I don't understand what they said. The remark that multiplication by φ induces $\varphi: E_r^{p,q} \rightarrow E_r^{p,q+k}$ commuting with

$$d_r: E_r^{p,q} \rightarrow E_r^{p+r, q-r+1} \text{ for all } r$$

is significant for the rest of the proof. But rest of the remarks are ^{not} so meaningful to me, and it seems to me that the remark is not clear.

$$\begin{array}{ccc} \eta \in E_r^{p,q} & \xrightarrow{\wedge \varphi} & E_r^{p,q+k} \ni \eta \wedge \varphi \\ \downarrow d_r & & \downarrow d_r \\ d\eta \in E_r^{p+r, q-r+1} & \xrightarrow{\wedge \varphi} & E_r^{p+r, q-r+1+k} \\ & \searrow & \uparrow \\ & & d\eta \wedge \varphi \end{array}$$

$$d(\eta \wedge \varphi) = d\eta \wedge \varphi \pm \eta \wedge d\varphi = d\eta \wedge \varphi. \quad \square$$

Now let ω be a Kähler form on E , and denote by L the map induced by multiplication by ω .

Then from the definition of the direct image sheaves,

$$L: R_{\pi}^q(\mathcal{O}) \rightarrow R_{\pi}^{q+2}(\mathcal{O}) \text{ is defined and if } \dim F = n$$