Def: A ~~cou~~ curvature operator $\Theta \in A^2(Hom(E,E))$ is positive at $x \in M$ if for $\lambda \neq 0 \in E_x$, the multivector

$$-i\,(\lambda, \Theta\lambda) \in \Lambda^2 T_x^* M$$ is positive of type (1,1), or equivalently if for any holomorphic tangent vector $v \in T_x'(M)$, the hermitian matrix

$$\langle \Theta(x) : v, \bar{v} \rangle \in Hom(E_x, E_x)$$ is positive definite.

We write $\Theta > 0$ if Θ is positive every where, $\Theta \geq 0$ if Θ is positive semidefinite, and $\Theta > \Theta'$ if $\Theta - \Theta' > 0$.

Let A the second fundamental form of the subbundle $S \subset E$ above, and write.

$$A = \sum_{\substack{1 \leq j \leq s \\ s < \lambda < r}} a^{\alpha}_{\lambda j}\, dz_\alpha \otimes e_\lambda \otimes e_j^* \in \Lambda^{1,0} T^*M \otimes Q \otimes S^*$$

on S, Q $\oplus$; $\ominus$ on T^*M

$$\Rightarrow {}^t\bar{A} = \sum \overline{a^{\alpha}_{\lambda j}}\, d\bar{z}_\alpha \otimes e_\lambda^* \otimes e_j \in \Lambda^{0,1}(T^*M) \otimes Q^* \otimes S$$

$$\Rightarrow A \wedge {}^t\bar{A} = \sum \underbrace{a^{\alpha}_{ik}\, \overline{a^{\beta}_{jk}}\, dz_\alpha \wedge d\bar{z}_\beta}_{} \otimes e_i \otimes e_j^* .$$

$$\Uparrow$$

$$\sum (A \wedge {}^t\bar{A})_{ij}\; e_i \otimes e_j^*$$

Applying e_i^* and e_j, $(A \wedge {}^t\bar{A})_{ij} = \sum_k A_{ik} \wedge ({}^t\bar{A})_{kj}$

$$A_{ik} = \sum a^{\alpha}_{ik}\, dz_\alpha$$

$$({}^t\bar{A})_{kj} = \sum \overline{a^{\beta}_{jk}}\, d\bar{z}_\beta \Rightarrow A_{ik} \wedge ({}^t\bar{A})_{kj}$$

$$= \sum a^{\alpha}_{ik}\, dz_\alpha \wedge \overline{a^{\beta}_{jk}}\, d\bar{z}_\beta$$