$$\Theta^* = \bar\partial \partial \log \|Z\|^2 = 2\pi i \, dd^c \log \|Z\|^2.$$

$$\begin{tikzcd}
J \subset \mathbb{P}^n \times \mathbb{C}^{n+1} \arrow[dd] & \\
U \times \mathbb{C}^{n+1} & \\
\mathbb{P}^n \supset U \arrow[u, dashed, "Z"'] &
\end{tikzcd}$$

$\Rightarrow$ By Proposition (in the proof).

$$\Theta^* = -\partial\bar\partial \log |S|^2 = -\partial\bar\partial \log \|Z\|^2.$$

Since $d = \partial + \bar\partial$, & $d^c = \frac{i}{4\pi}(\bar\partial - \partial)$, $2\pi i \, dd^c = -\partial\bar\partial$.

$$\Rightarrow \Theta^* = -\partial\bar\partial \log \|Z\|^2 = 2\pi i \, dd^c \log \|Z\|^2.$$

The curvature form Θ for the dual metric in $[H]$ is then $-\Theta^*$, and consequently

$$\frac{i}{2\pi} \Theta = dd^c \log \|Z\|^2,$$

i.e., $\frac{i}{2\pi}\Theta$ is just the associated (1.1)-form ω of the Fubini-Study metric on $\mathbb{P}^n$, which we have seen is positive.

$c_1(J \otimes [H]) = c_1(J) + c_1([H]) = 0$ &
$c_1([H]) = \frac{i}{2\pi}\Theta \qquad c_1(J) = \frac{i}{2\pi}\Theta^*$

$$\Rightarrow \Theta^* = -\Theta$$

See P 30. Example 3. $\frac{i}{2\pi}\Theta = \omega$ is proved to be positive.

As a corollary, we see again that the Poincare dual of $[\omega] \in H^2_{DR}(\mathbb{P}^n)$ is the fundamental class (H)