┏ $-\Omega_{[E]}$ is already defined throughout $\tilde{\mathcal{U}}_\epsilon$ and so is $\pi'^*\omega$. $\tilde{\mathcal{U}}_\epsilon - E = \tilde{\mathcal{U}}_\epsilon - E \Rightarrow \pi'^*\omega = -\Omega_{[E]}$ by the identity theorem, ($\tilde{\mathcal{U}}_\epsilon - E$ is open).

$\Rightarrow -\Omega_{[E]}|_E = \pi'^*\omega|_E = \omega > 0$ on E, since π'^* is one to one.

Summing up, if we let $\Omega_{[-E]}$ be $i/2\pi$ times the curvature form of the dual metric in $[E]^* = [-E]$, we have

$$\Omega_{[-E]} = -\Omega_{[E]} = \begin{cases} 0 & \text{on } \tilde{M} - \tilde{\mathcal{U}}_{2\epsilon} \\ \geq 0 & \text{on } \tilde{\mathcal{U}}_\epsilon, \\ > 0 & \text{on } T'_x(E) \subset T'_x(\tilde{M}) \text{ for all } x \in E. \end{cases}$$

┏ For $\Omega_{[-E]} = -\Omega_{[E]}$, see p148 & p139

$\omega = \Omega_{[-E]}|_E > 0 \iff \omega > 0$ on $T'_x(E)$.

The point of this computation is the following: let $L \longrightarrow M$ be a positive line bundle with a metric h_L whose curvature form Θ_L is $2\pi/i$ times a positive form Ω_L. ┏ See p148.

Then if Ω_{π^*L} is $\frac{i}{2\pi}$ times the curvature form of the induced metric on the bundle $\pi^*L \longrightarrow M$,

$$\Omega_{\pi^*L} = \pi^*\Omega_L,$$

hence $\Omega_{\pi^*L} > 0$ on $\tilde{M} - E$.

┏
$$\begin{array}{ccc} \pi^*L & \longrightarrow & L \\ \downarrow & & \downarrow \\ \tilde{M} & \xrightarrow{\pi} & M \end{array}$$

π^*L is given the induced metric from L.

$\pi^*L \subset \tilde{M} \times L$.