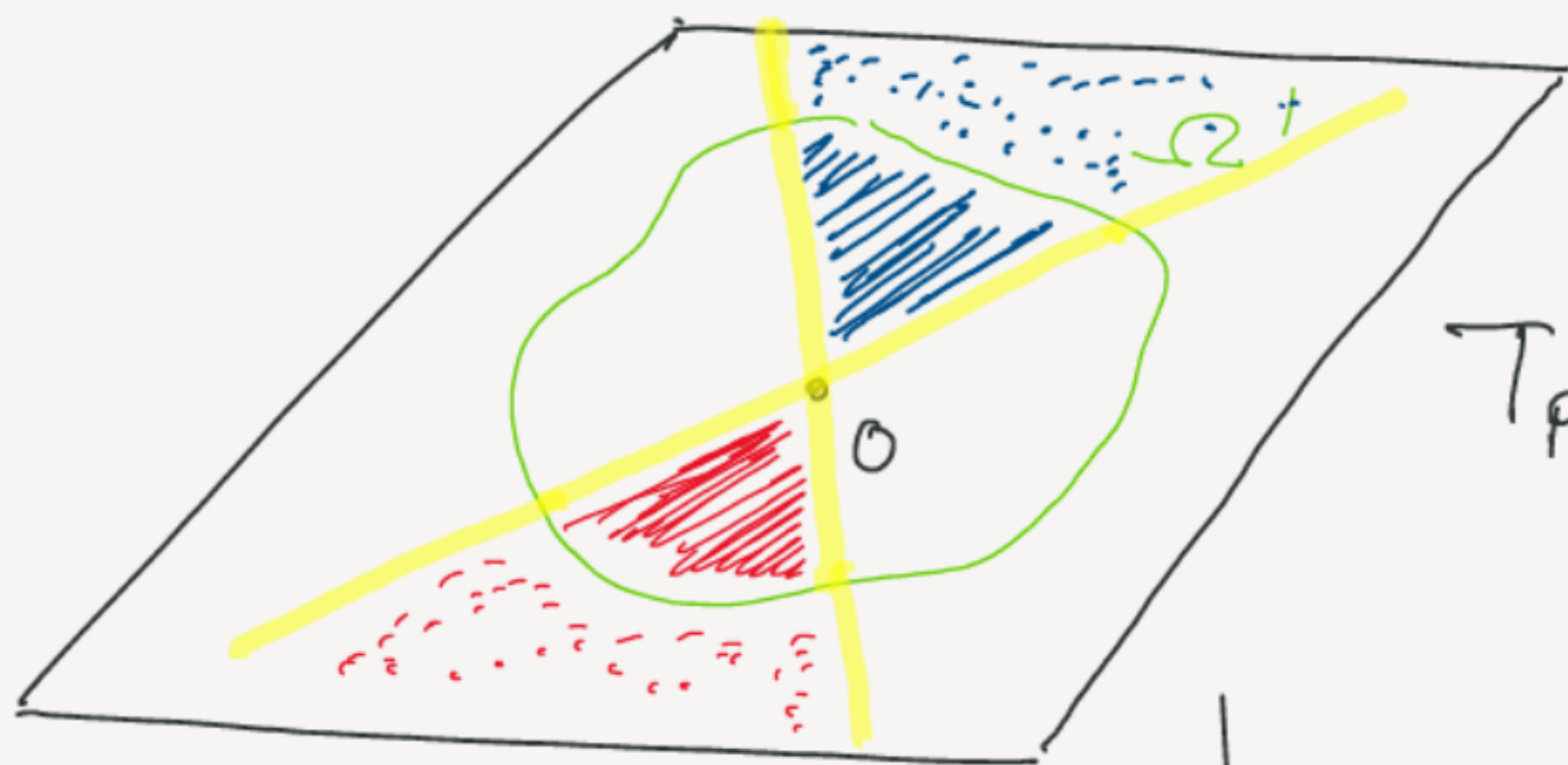



Cor 2.13 $p \in M$, Ω' a starshaped (wrt $0 \in T_p M$) neighborhood of 0 in $T_p M$.

Let $\exp_p: \Omega' \rightarrow \Omega \subset M$ be a diffeomorphism.

Then $\underline{I}_+^\Omega(p) = \exp_p(\underline{I}_+^{T_p M}(0) \cap \Omega')$


$\underline{J}_+^\Omega(p) = \exp_p(\underline{J}_+^{T_p M}(0) \cap \Omega')$



 lightlike lines through $0 \in T_p M$

\exp_p



 lightlike geodesics through p