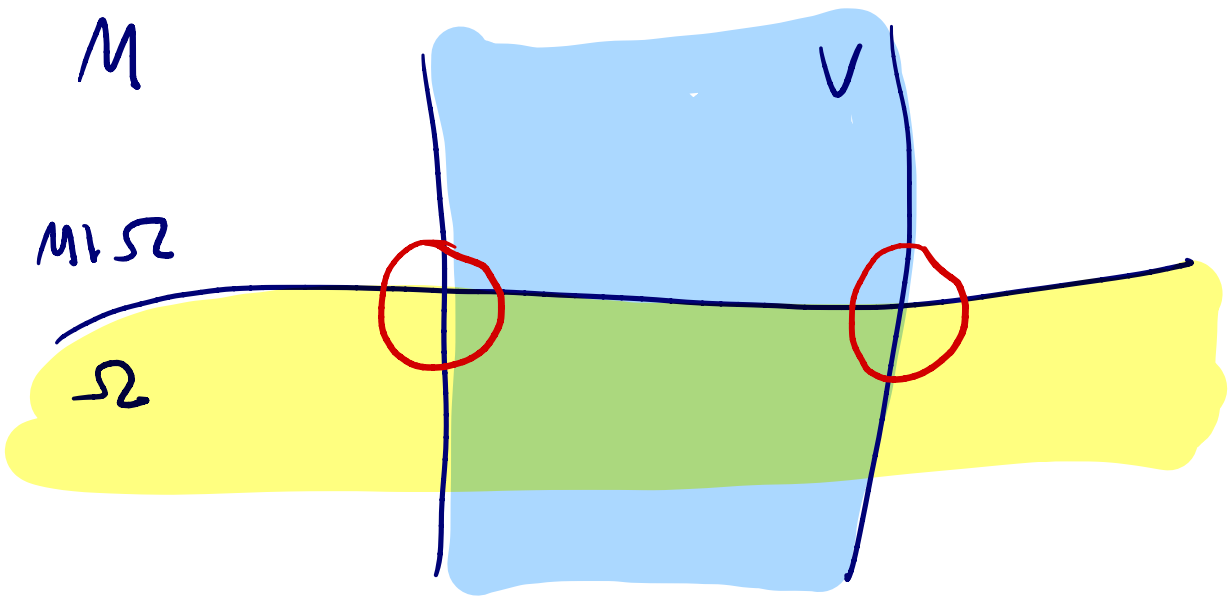
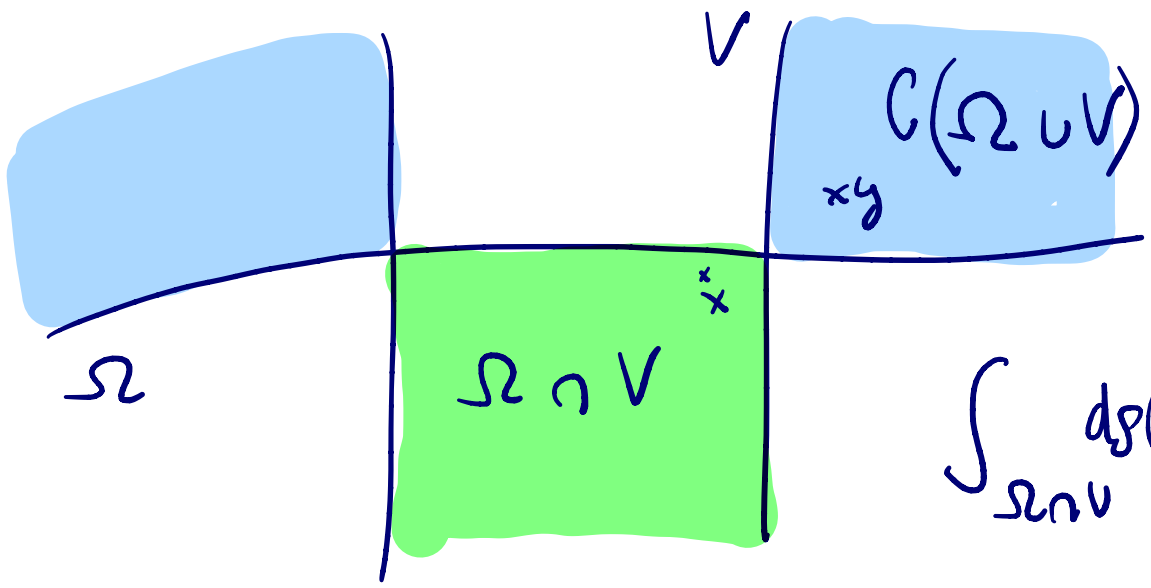
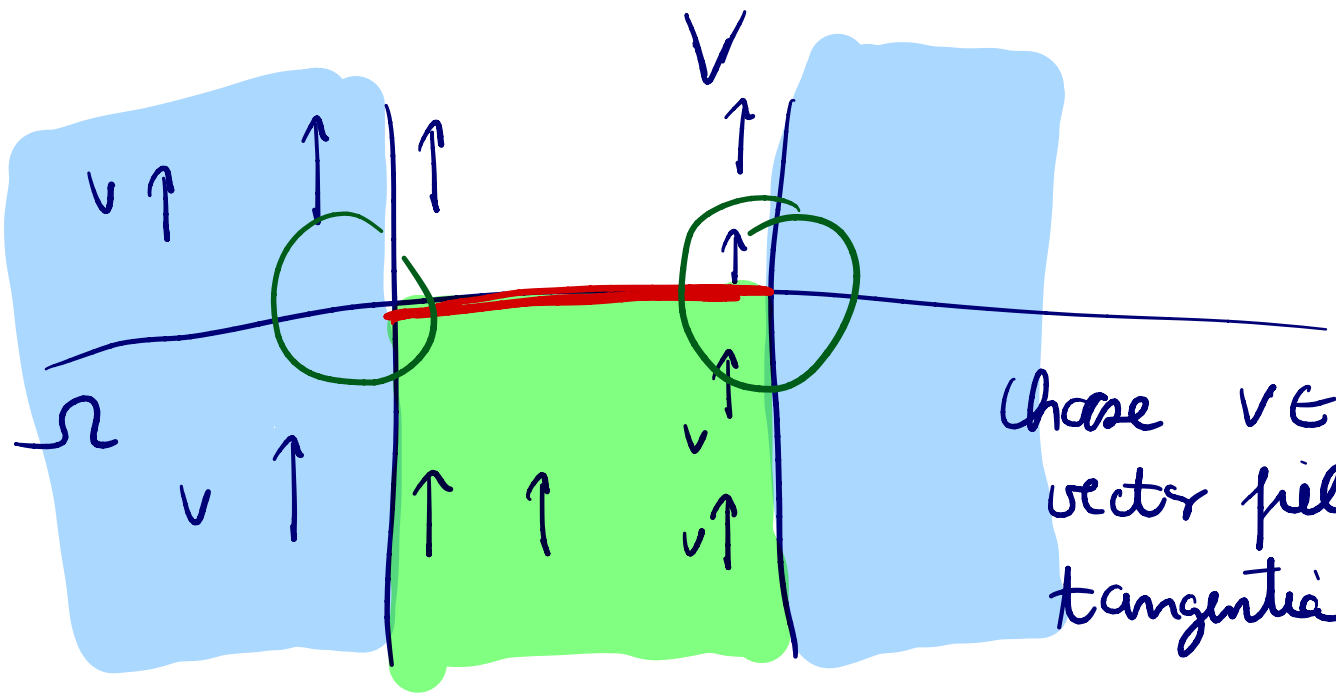


$$\dot{z} = \int_{\partial\Omega\cap\partial V} \dots$$



$$\int_{\Omega\cap V} d\rho(x) \int_{M\setminus(\Omega\cup V)} d\rho(y)\,(\dots)\,\mathcal{L}(x,y)$$

better: work with time solutions
(assume that M has a smooth manifold structure)



choose $v \in \Gamma(M, TM)$
vector field which is
tangential to ∂V

v decays ↓

$$A = \int_{\Omega \cap V} d\rho(x) \int_{M \setminus V} d\rho(y) \; \nabla_{1,\underline{V}} \, (\cdots) \, \mathcal{L}(x,y)$$

$$= \int_{\partial\Omega \cap V} d\mu(v,x) \int_{M \setminus V} (\cdots) \, \mathcal{L}(x,y)$$

alternatively

$$\int_{\Omega \cap V} d\rho(x) \int_{M \setminus V} d\rho(y) \; \nabla_{2,\underline{V}} \, (\cdots) \, \mathcal{L}(x,y) = 0$$

$$A = \int_{\Omega \cap V} d\rho(x) \int_{M \setminus V} d\rho(y) \, (\nabla_{1,\underline{V}} - \nabla_{2,\underline{V}}) (\cdots) \, \mathcal{L}(x,y) .$$