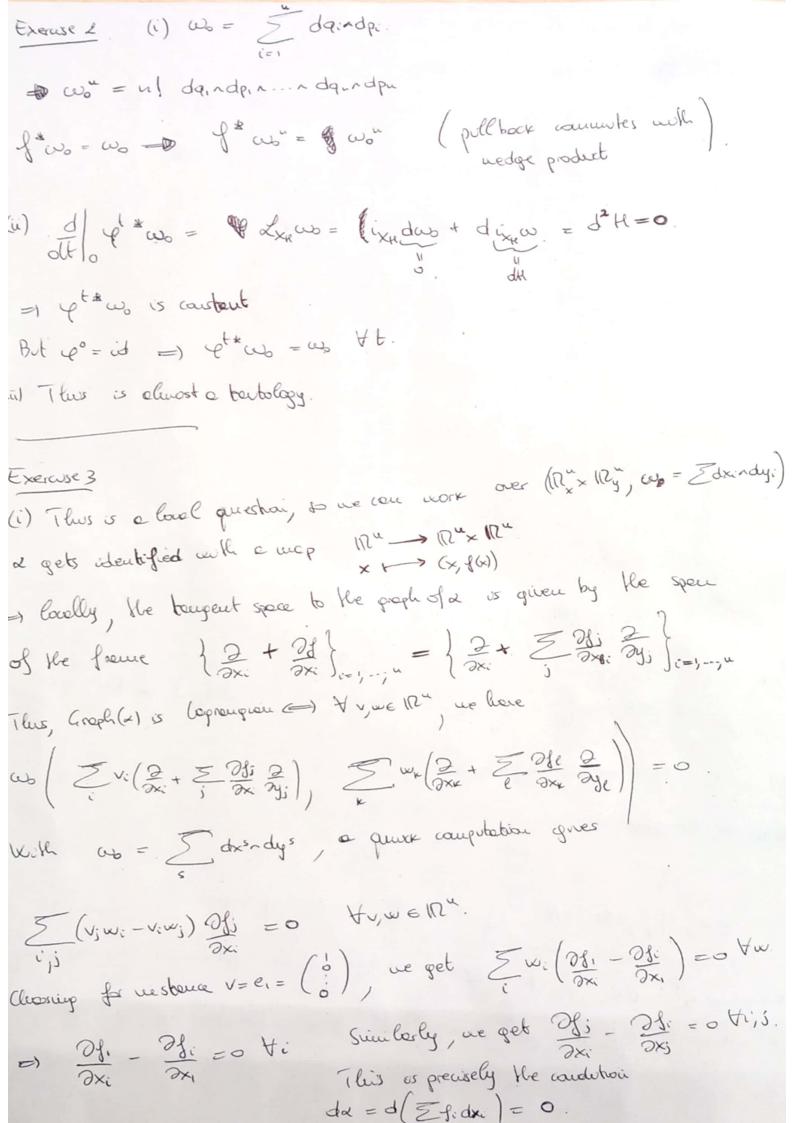
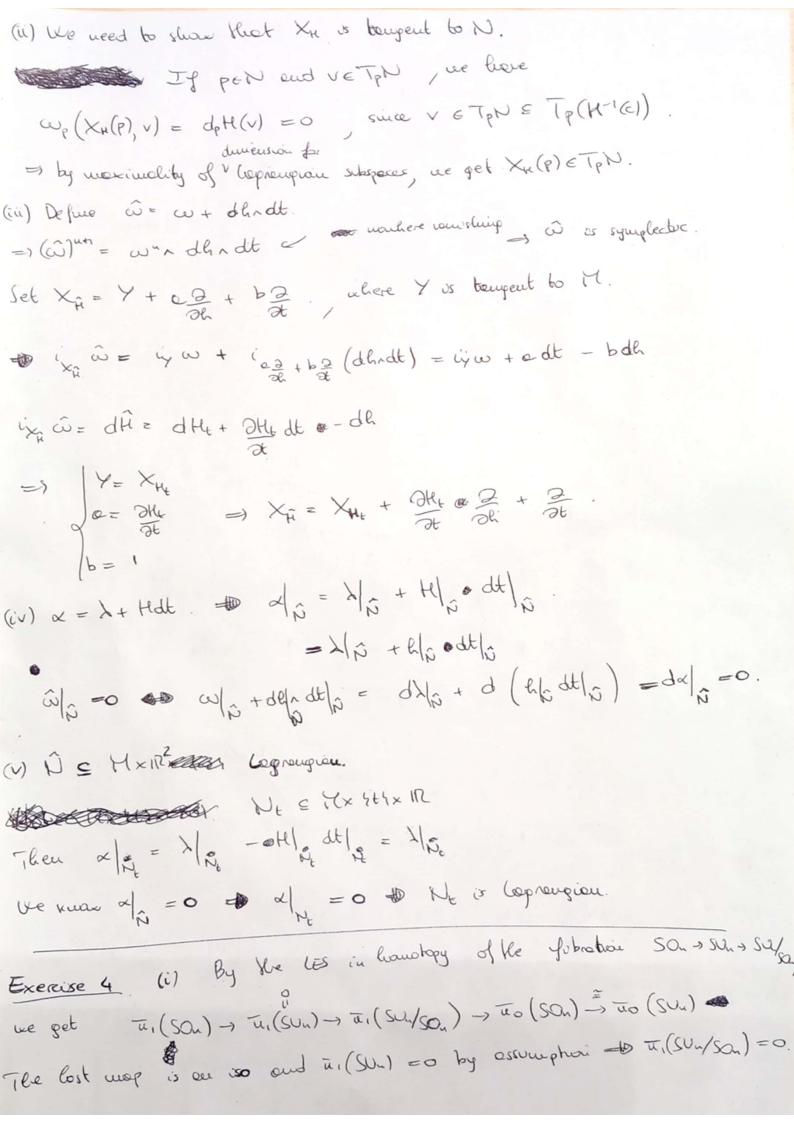
64 (CV) & Symplectic wiptier For 500500. (i) We will show the chain of might hours S symplectic => Sw symplectic => cu/s wardegenerate => S symplectic. The first auphration is true ai highet of Sun = S. If So is symplectic, we can unte V = So So let ue S. w(u,v) = 0 treS =) w(u,v) = 0 tre V =1000 by wondepeneracy of w. =) w/s is wondepenerate Costly, suppose Sus unt symplecture, i.e. 20 =0 in SNS. =) a(v,v) = 0 tres = why is dependente. (ii) (=>) SE SW =) W/s = 0. (=) w/s=0 = total a. Fux ues. the hove a(u,v)=0 V ve 5 => ve 500. Thus shows S = 500. (ii) The Thus follows from the obscribe hat for any two subspaces X, Y EV such that XEY, we have You EXO. This a tourilly helds. The S Coprenguois weeks S=50 duris = 2 duriv

(=) by (a), S is isotropic., i.e. SE SW Suice dim S = dui SW

foods = 0 by (ii).





Exercise 5 (i) p. deta: Un/on -> 5' is dearly well-defined and it is a fibration what is the fiber? let es reunte Una in a deorer forme. There is a grap ismorphism of 50, and 5' and we identify 5' with $SU_n \times S' \longrightarrow U_n$ $(n, k) \longmapsto nk$ the subgroup of the fact togs given by $\left\{ \left(\begin{array}{c} \xi \\ 0 \end{array} \right) \right\} \in \mathbb{C}_{n} \left\{ \xi \in \mathbb{S}^{n} \right\} \right\}.$ Similarly, we can unte Q = SQ X Z2 where we identify $\mathbb{Z}_2 \cong \left\{ \begin{pmatrix} -1 & 0 \\ 0 & 0 \end{pmatrix} \in \mathbb{Q} \right\}$ Then, it follows that Un/an = SUn/son x 51/22
Thus shows that the fiber of dete?: Un/on -> S' is exactly SUn/on. Fran de les of the fibrohou det à une get $\overline{u}_{1}\left(\frac{2}{2}\left(\frac{3}{2}\left(\frac{3}{2}\right)\right)\right) \rightarrow \overline{u}_{1}\left(\frac{3}{2}\left(\frac{3}{2}\right)\right) \rightarrow \overline{u}_{1}\left(\frac{5}{2}\right)$ Thus mous bluet detà midres on mjechon on Ti, -graps.

It also indexes a surjection (Knus is clear) + deta: Un/an -> 5' indexes en osmorphism on u,.