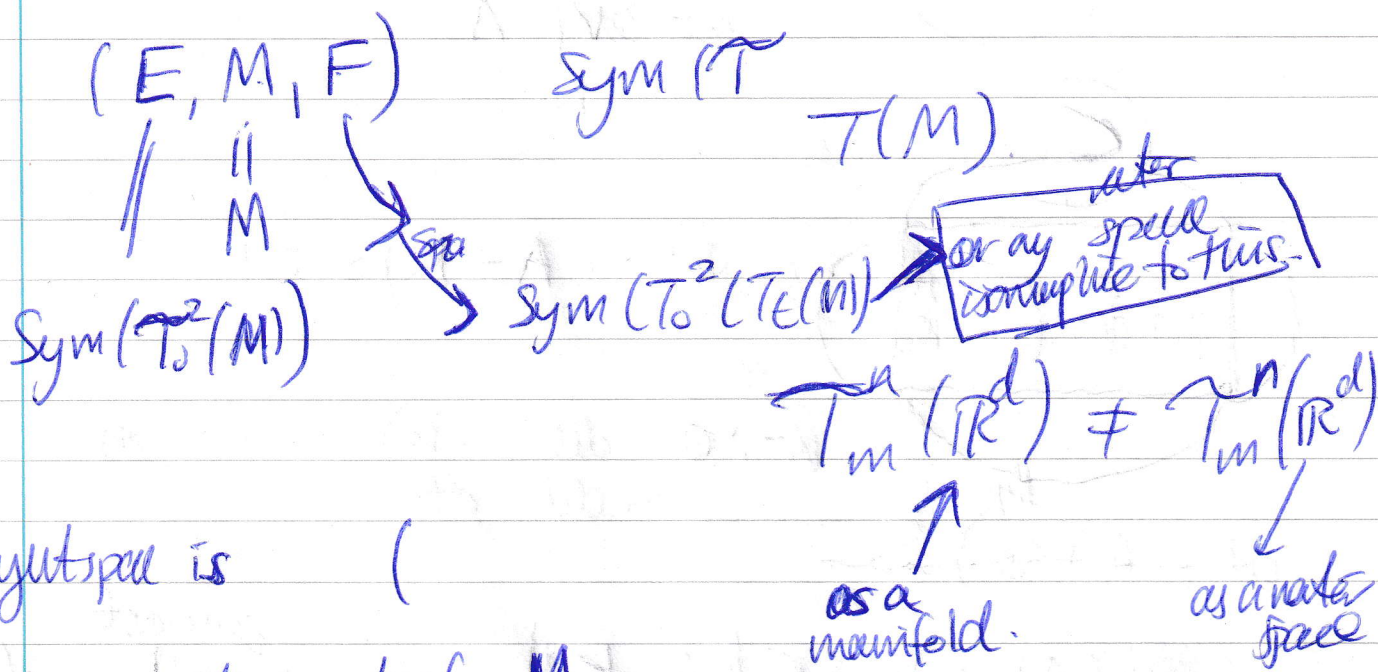


The Tensor spaces are vector spaces so are manifolds



target space is (at each point of  $M$ )  
look at  $T^2(M)$

$$T_m^n(M) = U$$

$$T_0^2(M)$$

$$f(\omega, t)$$

$$\text{Sym}(T_m^n(M)) = \bigcup_{t \in M} \text{Sym}(T_m^n(T_t M))$$

$$g: M \rightarrow \text{Sym}(T_m^n(M))$$

$$m \rightarrow 0, n=2$$

$$g_t \in \text{Sym}(T_m^n(T_t M))$$