0. NOTATION AND CONVENTION

0.1. A topological space is called <u>nice</u> if it is Hausdorff, locally compact, paracompact and with a countable basis for its topology.

0.2. If A is a topological space and $X \subset A$, then $cl_A(X)$ (resp. $int_A(X)$) denotes the closure (resp. interior) of X in A.

0.3. If A and B are topological spaces, then $A \sqcup B$ denotes their disjoint union.

0.4. For any set A, 1_A (or id_A) denotes the identity map of A.

0.5. Smooth means always differentiable of class C^∞.

0.6. The connected components of a smooth manifold may have different dimensions. Given a smooth manifold M we denote by TM its tangent bundle. If $x \in M$, TM_x denotes the tangent space of M at x. If N is another smooth manifold and $f : M \to N$ is smooth, $df : TM \to TN$ denotes the differential of f; if $x \in M$, then $df_x : TM_x \to TN_{f(x)}$ denotes the restriction of df. The smooth map f is called <u>submersive</u> if df_x is surjective for any $x \in M$.

0.7. Let A be a topological space and let X, Y and Z be subsets of A. Let f and g be maps defined on X and Y respectively. We say that f <u>equals</u> g <u>near</u> Z (denoted $f = g$ near Z) if there exists a neighborhood U of Z such that $f|X \cap U = g|Y \cap U$. The same terminology is also used in other similar situations (for example $X = Y$ near Z means that there exists a neighborhood U of Z such that $X \cap U = Y \cap U$).

0.8. R denotes the field of real numbers ; $R_+ = \{r \in R ; r \geq 0\}$ and $R_+^* = \{r \in R ; r > 0\}$.