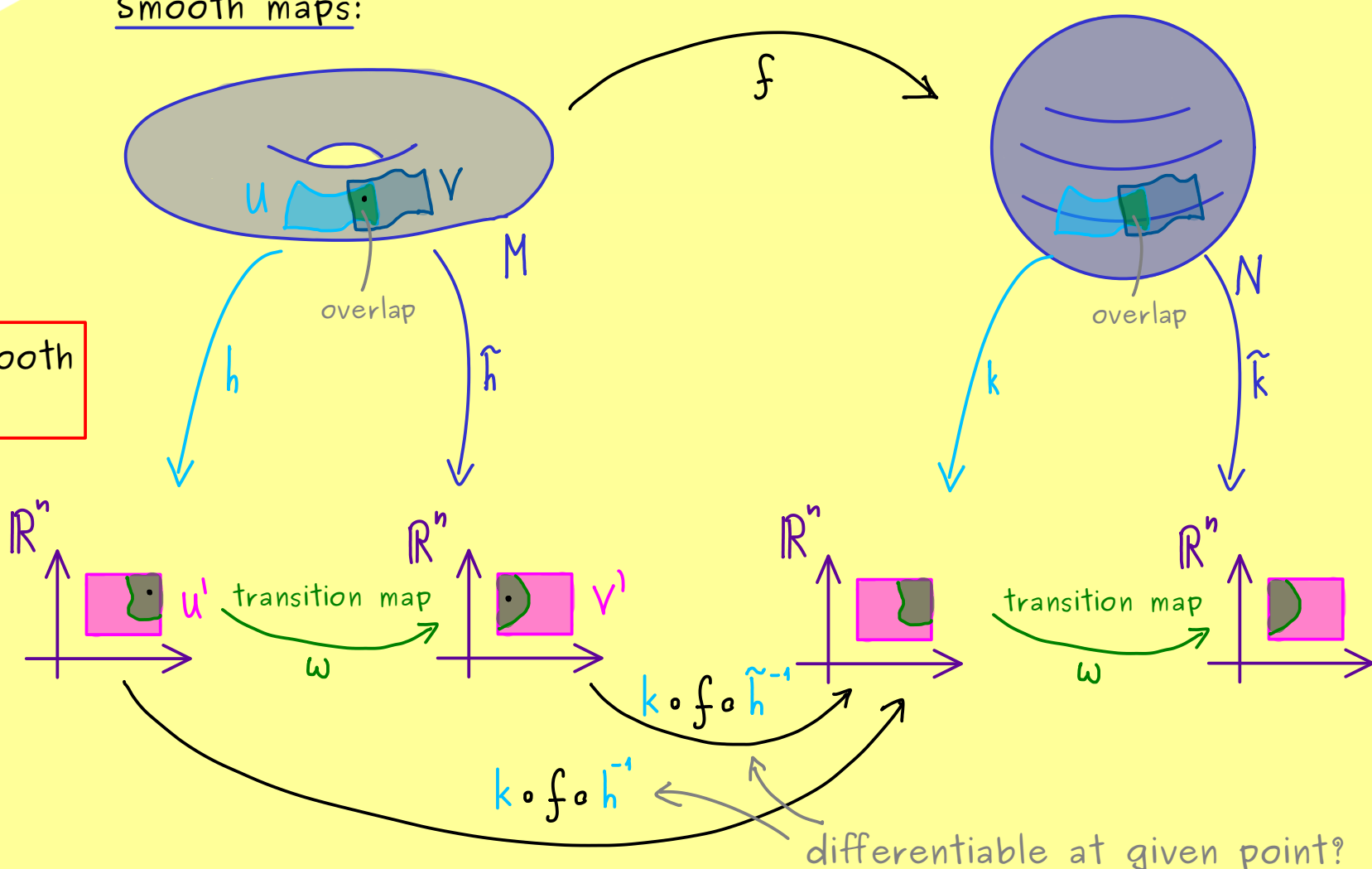




Manifolds - Part 16

Smooth maps:



Definition: Let M and N be C^∞ -smooth manifolds.

A map $f: M \rightarrow N$ is called k -times differentiable at $p \in M$

if for charts $(U, h), (W, k)$ with $p \in U$ and $f(p) \in W$

the map $k \circ f \circ h^{-1}$ k -times differentiable at $h(p)$.

Moreover: $f: M \rightarrow N$ is called C^∞ -smooth if f is k -times differentiable at $p \in M$

for every $p \in M$ and every $k \in \mathbb{N}$. We write: $f \in C^\infty(M, N)$.