

We study the optimal conditions on a homeomorphism $f : \Omega \rightarrow \mathbb{R}^n$ which guarantee that the composition $u \circ f$ is weakly differentiable and its weak derivative belongs to the some function space. We show that if f has finite distortion and q -distortion $K_q = |Df|^q/J_f$ is integrable enough, then the composition operator $T_f(u) = u \circ f$ maps functions from $W_{\text{loc}}^{1,q}$ into space $W_{\text{loc}}^{1,p}$ and the well-known chain rule holds. To prove it we characterize when the inverse mapping f^{-1} maps sets of measure zero onto sets of measure zero (satisfies the Luzin (N^{-1}) condition). We also fully characterize conditions for Sobolev-Lorentz space $WL^{n,q}$ for arbitrary q and for Sobolev Orlicz space $WL^q \log L$ for $q \geq n$ and $\alpha > 0$ or $1 < q \leq n$ and $\alpha < 0$. We find a necessary condition on f for Sobolev rearrangement invariant function space WX close to WL^q , i.e. X has q -scaling property.