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**Weak limit of homeomorphisms in $W^{1,n-1}$:
invertibility and lower semicontinuity of energy**

Let $n \geq 3$, $\Omega, \Omega' \subset \mathbb{R}^n$, be bounded domains and let f_m be a sequence of homeomorphisms $f_m : \Omega \rightarrow \Omega'$ that satisfy the Lusin (N) condition with prescribed Dirichlet boundary condition and either

$$\sup_m \int_{\Omega} (|Df_m|^{n-1} + A(\text{adj } Df_m) + \phi(J_f)) < \infty$$

(where A satisfies $\lim_{t \rightarrow \infty} \frac{A(t)}{t} = \infty$) or $\sup_m \int_{\Omega} (|Df_m|^{n-1} + 1/(J_f)^a) < \infty$ with $a = (n-1)/(n^2 - 3n + 1)$. Let f be a weak limit of homeomorphisms f_n in $W^{1,n-1}$. We show that f satisfies the (INV) condition of Conti and De Lellis, that f satisfies the Lusin (N) condition and that the polyconvex energy functional is lower semicontinuous.

This is a joint work with A. Doležalová, J. Malý and A. Molchanova.