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L^p -approximation of Jacobians

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Abstract: The paper investigates the nonlinear function spaces introduced by Giaquinta, Modica and Souček. It is shown that a function from $Cart^p(\Omega, \mathbf{R}^m)$ is approximated by \mathcal{C}^1 functions strongly in $\mathcal{A}^q(\Omega, \mathbf{R}^m)$ whenever $q < p$. An example is shown of a function which is in $cart^p(\Omega, \mathbf{R}^2)$ but not in $cart^p(\Omega, \mathbf{R}^2)$.

Keywords: Sobolev spaces, minors of the Jacobi matrix, weak and strong convergence, cartesian currents

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