962-28-931 **Bing Liu*** (`bliu@svsu.edu`), Department of Mathematical Science, Saginaw Valley State University, 7400 Bay Road, University Center, MI 48710. $A_r(\lambda)$-*weighted Caccioppoli-type and Poincaré type inequalities for A-harmonic tensors.* Preliminary report.

Recent years there are many studies about A-harmonic tensors and their characterizations. For example, the generalization of Caccioppoli type and Poincaré type inequalities to A-harmonic tensors are done by Shusen Ding and others. Our work here is also a kind of generalization but with different type of weights. Then, some previous results can be treated as special cases of ours. We first prove local versions of a Caccioppoli-type and a Poincaré type inequalities with $A_r(\lambda)$-weights for A-harmonic tensors. Then, as application of the local result, we obtain the global result of Poincaré -type inequality for A-harmonic tensor solutions to A-harmonic equation in a domain $\Omega \subset R^n$. (Received September 29, 2000)

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