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Caccioppoli's inequalities on constant mean curvature hypersurfaces in Riemannian manifolds

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(Submitted on 19 Jul 2011 (v1), last revised 22 Mar 2012 (this version, v2))

This is a revised version (minor changes and a deeper insight in the positive curvature case).
We prove some Caccioppoli's inequalities for the traceless part of the second fundamental form of a complete, noncompact, finite index, constant mean curvature hypersurface of a Riemannian manifold, satisfying some curvature conditions. This allows us to unify and clarify many results scattered in the literature and to obtain some new results. For example, we prove that there is no stable, complete, noncompact hypersurface in ${\mathbb R}^{n+1},$ $n\leq 5,$ with constant mean curvature $H\not=0,$ provided that, for suitable $p,$ the L^p-norm of the traceless part of second fundamental form satisfies some growth condition.

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