Strong A-infinity weights and Sobolev capacities in metric measure spaces

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Abstract. We study strong A-infinity weights in Ahlfors Q-regular unbounded and geodesic metric measure spaces satisfying a weak $(1,s)$-Poincaré inequality. It is shown that if $\max(1, Q-1) < s \le Q < \infty$, a function u yields a strong A-infinity weight of the form $w = e^{Qu}$ whenever u has a minimal s-weak upper gradient with sufficiently small Morrey norm.