Erratum

Erratum to: A Penrose-Like Inequality for General Initial Data Sets

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Two errors in [1] have recently been pointed out by Jan Metzger. The first concerns the constant σ in the statement of Theorem 1.2. Namely, this constant is in fact zero. To see this fix large $L > 0$. Let $z_L \in C^\infty(\overline{M})$ be identically 1 up to height L (in $M \times \mathbb{R}$), and be zero above height $2L$, with $|\overline{\nabla} z_L| < 2L^{-1}$. It follows that $\|\overline{\nabla} z_L\|_{L^2(\overline{M})} \sim L^{-1/2}$. Hence, we find that $\sigma = 0$ by letting $L \rightarrow \infty$. The second error concerns Lemma 2.2. Namely, the quantity $\overline{H} - q(\overline{N})$ may not necessarily approach zero as $r \rightarrow 0$. This may be seen by examining certain spherically symmetric examples. Lemma 2.2 is not necessary in order to establish the main result. More precisely, the Penrose-like inequality with a corrected definition of σ may be derived from the ideas in this paper, together with some additional arguments. The details will be given by the author in a separate paper.

Reference

1. Khuri, M.A.: A Penrose-like inequality for general initial data sets. Commun. Math. Phys. **290**(2), 779–788 (2009)

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