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Erratum

An Investigation of the Limiting Behavior of Particle-like Solutions to the Einstein–Yang/Mills Equations and a New Black Hole Solution

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Theorems 4.1, Corollary 4.3, Theorem 4.4, Proposition 4.6 and Corollary 4.6 of the above paper are incorrect. The corrected version is summarized by:

Theorem. *If* $\{A_n(r)\}$ *is a sequence of radially symmetric black hole solutions to the Einstein–Yang/Mills Equations (particle-like solutions if* $\rho = 0$*) and if* $\lim_{n\to\infty} \Omega(A_n) = \infty$, *then for* $r > 1, \lim_{n\to\infty} A_n(r) = (0, 0, \bar{A}(r), r)$, *where* $\bar{A}(r) = 1 - \frac{2}{r} + \frac{1}{r^2}$ *if* $\rho \leqq 1$ *and* $\bar{A}(r) = 1 - \frac{(\rho+\rho^{-1})}{r} + \frac{1}{r^2}$ *if* $\rho \geqq 1$. *Moreover, the convergence is uniform on bounded r intervals.*

In other words, any sequence of black hole solutions with event horizon $\rho \geqq 0$ and increasing rotation numbers, must converge to an appropriate Riessner–Nordström solution for $r > 1$. (If $\rho \leqq 1$ then these black hole solutions must converge to the critical Riessner–Nordström solution for $r > 1$.)

The results in Sects. 2, 3, and 5 of the above paper are correct as stated, as are Lemmas 4.2 and 4.5. Section 6 is no longer relevant in view of the above theorem. The error is in the paragraph preceding Theorem 4.1 of the above paper; the authors assert that $p \neq (0,0)$ – in fact, $P = (0,0)$. P. Breitenlohner and D. Maison have also found this error and their proof of the above theorem in the case $\rho < 1$ will appear shortly.

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