Corrigenda, errata et addenda

Ivica Smolić

November 13, 2023

This is a collection of errors and omissions that have crept into published papers to which I am either the author or a coauthor.

27. A. Bokulić, I. Smolić and T. Jurić: *Nonlinear electromagnetic fields in strictly stationary spacetimes*, Phys. Rev. D **105** (2022) 024067 [DOI] [arXiv: 2111.10387]

   In order to be consistent with the conventions in the rest of the section, the kinetic term form the scalar field in the Lagrangian density, equation (48), should have the opposite sign,

   $$\mathscr{L}^{\mathrm{tot}} = \mathscr{L}(\mathcal{F}, \mathcal{G}) - (\mathcal{D}_a \phi)^* (\mathcal{D}^a \phi) - \mathscr{U}(\phi^* \phi) \,.$$

26. A. Bokulić, I. Smolić and T. Jurić: *Black hole thermodynamics in the presence of nonlinear electromagnetic fields*, Phys. Rev. D **103** (2021) 124059 [DOI] [arXiv: 2102.06213]

   Sign η on the left hand side of the equation (14) is superficial. Also, the last term on the right hand side of the equation (88) should have the opposite sign,

   $$\delta \mathcal{E} = \frac{\kappa}{8\pi} \, \delta \mathcal{A} + \Omega_{\mathsf{H}} \delta J + \Phi_{\mathsf{H}} Q - \beta_i \delta K^i_\chi \,,$$

   as is clearly visible after the application of the Legendre transformation $M = \mathcal{E} + \beta_i \delta K^i_\chi$ to the equation (86).

21. I. Smolić: *Spacetimes dressed with stealth electromagnetic fields*, Phys. Rev. D **97** (2018) 084041 [DOI] [arXiv: 1711.07490]

   In order to be consistent with the conventions presented in the introduction of the paper, electromagnetic energy-momentum tensor in the equation (10) should have the opposite sign,

   $$T^{(\mathrm{Max})}_{ABA'B'} = +\frac{1}{2\pi} \, \phi_{AB} \, \overline{\phi}_{A'B'} \,.$$

   Also, the final integral on the right hand side of the equation (10) should have the opposite sign (cf. definition of the 2-form Z_{ab} in the equation (9)),

   $$Q = \frac{1}{4\pi} \int_{\mathbb{S}} \star Z = +\frac{1}{\pi} \int_{\mathbb{S}} \mathscr{L}_{\mathcal{G}} F \,.$$

   None of these signs affect the rest of the conclusions in the paper.

19. L. Gulin and I. Smolić: *Generalizations of the Smarr formula for black holes with nonlinear electromagnetic fields*, Class. Quantum Grav. **35** (2018) 025015 [DOI] [arXiv: 1710.04660]

   In order to be consistent with the original definition of the Ayón-Beato–García's NLE Lagrangian (reference [21] in the paper), the Lagrangian in the equation (A.4) should have the opposite sign,

   $$\mathscr{L}^{(\mathrm{Bardeen})} = -\frac{3M}{g^3} \left(\frac{g\sqrt{2\mathcal{F}}}{2 + g\sqrt{2\mathcal{F}}} \right)^{\frac{5}{2}}$$

   and, consequently, equations (84) and (86) should have the opposite sign,

   $$\Delta_{\mathrm{Bardeen}} = -\frac{M}{2} \left(1 - \frac{(r_{\mathsf{H}}^2 + 4g^2)r_{\mathsf{H}}^3}{(r_{\mathsf{H}}^2 + g^2)^{5/2}} \right) \,,$$

   $$\Delta_{\mathrm{Bardeen}} = -\frac{M}{2} \left(1 - x^3 - \frac{3g^2}{2M} \frac{x^2}{Mx + \sqrt{M^2 x^2 - g^2}} \right) \,.$$