

Review of: "A direct calculation in the newtonian gravity framework"

Zhengtao Wang¹

¹ Wuhan University

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Although the authors claim that "This result is classically proven for the gravitational field by using the Gauss theorem giving the total flux through a closed surface enclosing the body, applied to the concentric sphere containing the point, and exploiting the symmetry." The method introduced by the authors, as "direct calculation without relying on the general Gauss theorem", can also be found in text books. Please see page 49 to page 53 of the book: <Blakely RJ (1996) Potential theory in gravity and magnetic applications. Cambridge University Press, Cambridge>. The derivation there is equivalent to the derivation applied by the authors for a spherical shell with surface density $\sigma = \mu(r)dr$. Once we find the answer to the spherical shell, the derivation for the spherical symmetric density case is trivial (just integrate along the radial direction $\int_0^R <...> dr$).

Another suggestion, better use bold face symbols to denote vectors in 3-d space, that would be more common in geophysics, and easier for readers.