Review of: "A simple direct empirical observation of systematic bias of the redshift as a distance indicator"

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Potential competing interests: No potential competing interests to declare.

This case for a redshift anomaly related to galactic rotation is convincing and well documented. As such it deserves to be discussed and better understood.

I have concerns about one point:

1. A possible Doppler shift related to the rotational velocity of galaxies is mentioned both in the Introduction and Conclusion. But since the effect is maximum when the Milky Way and the observed galaxy are face-to-face, the only Doppler effect that can be exhibited is a transverse one, which is a second order, that is, a very small, effect.

I also have some suggestions:

1. Since no physical explanation is provided at this point for this anomaly, I think it would be simpler to conclude that galaxies seem to prefer to be a bit farer from the Milky Way when they rotate clockwise than when they rotate in the opposite direction. Note that though this may point to “new physics” it could also prove to be a mere consequence of the way spirals form. In the later case, the effect could possibly be seen in cosmological simulations.
2. The fact that the effect is not a finite sample size effect may need to be confirmed, for instance by picking at random 202+204 cases in the 20x20 field, to see how values seen in the 10x10 field (Table 1) are likely to occur.
3. If possible, it would be nice to try to check if this anomaly is distance dependent, by making at least three redshift bins with samples of same size.

A few additional points:

1. Results, top paragraph: “opposite … opposite” may prove confusing.
2. Table 1: results for the two larger fields could be shown as well.
3. Table 4: I think it would be better if delta values were negative, so as to have the same convention than in Table 1 (obtaining opposite results at opposite poles being one of the strengths of this study).
4. Table 5: The 3% error range is unusual. Better give the usual 5% one.