

Major concerns/comments:

*1. My primary concern regards the significance of the work. Fig. 1 indicates that gas accretion is responsible for ~10% of the final BH mass, with the dominate growth channel being BH-BH mergers. Given this, why is a detailed study of the gas accretion channels interesting? It would seem much more natural to focus on the details of the BH-BH mergers. Perhaps the progenitor BHs that merge are primarily grown via gas accretion; if so, it would be interesting to explore **their** gas accretion channels.*

The authors agree that the primary concern of the referee is valid. While this study focuses on the gas accretion occurring in the galaxy and SMBH of h258, a followup examination of the BH-BH merger component of the SMBH has been undertaken and will be discussed in a subsequent paper. Nevertheless, the reasoning behind the original study's focus on the gas component of the SMBH mass is two-fold. First, this study is a continuation of the research done by Bellovary et. al. 2013 which examined the gas accretion in high mass, high redshift galaxies. While the gas component of the SMBHs in Bellovary et. al. 2013 also contribute less to the SMBH growth than BH-BH merger, we were interested in the gas accretion of h258 in comparison. It is also important to note how our results are unique from Bellovary et. al. 2013. While they discover SMBHs whose gas mass mirrors the host galaxy's, this result is the first to show the majority of secondary halo gas funneling directly into the SMBH of the main halo through a major merger. Observational evidence also supports our conclusion. Secondly, while we are additionally interested in the BH-BH merger component of the SMBH mass, there are still concerns about the heavy model dependency of our BH seed formation. We focused on the resulting most massive SMBH which accreted the most gas and examined the gas accretion which we felt gave the most robust and confident results.

2. Given the authors' initial gas particle mass and force softening, the maximum density at which self-gravity is correctly treated is $\sim 0.2 \text{ cm}^{-3}$. This is a factor of 50 less than the density threshold for star formation, which leads me to question the physical meaningfulness of the 'high' density threshold. At the least, the authors should comment on whether they've checked whether their results depend on the force softening or/and mass resolution employed.

[Jillian is adding this to Latex Doc; Talk to her about report justification.]

3. Somewhat related to #2, I have some concerns about the stellar feedback implementation. Specifically, the authors inject thermal energy from SNe and turn off cooling for some period of time to prevent the energy from being immediately radiated away. More sophisticated (and arguably superior) treatments of SNe feedback have been presented over the past few years (e.g. Hopkins et al. 2014, Agertz & Kravtsov 2015, Keller et al. 2015, 2016), and I am concerned that implementing an alternative stellar feedback method could change the details of the gas accretion onto the BHs (because the ISM structure could be fundamentally altered). I realize that it is too much to ask the authors to completely change their stellar feedback model, but they should at least comment on this caveat.

While the authors agree that different treatments of the SNe feedback may alter the structure of the ISM, previous studies (such as those by Christensen et. al. 2014, Keller et. al. 2014) produce simulated galaxies with similar SNe prescriptions to ours and determined that the resulting ISM remained consistent with each other. These results are in good agreement with our simulations. For clarification, we've expanded on this caveat in the Simulation Parameters section.

4. It would be useful to include some observational comparisons to determine whether the BH properties are reasonable. For example, does the galaxy lie on the M-sigma relation? Is the luminosity reasonable?

Yes, our galaxy does lie on the M-sigma relation. The SMBH has a total mass of $1.3 \times 10^7 M_{\odot}$ and a velocity dispersion in the bulge of $\sigma \sim 152 \text{ km/s}$.

5. *It would be nice to see some analysis of how torques during the merger affects the angular momentum of the gas. The authors find that mergers preferentially bring in low-angular-momentum gas. However, it also important that they torque gas and cause it to lose angular momentum? Is gas in the pre-existing disk torqued differently than gas brought in by the merger?*

The authors agree that an analysis of the torques on the angular momentum of the gas would be beneficial to future examinations of this galaxy; however, for the current analysis, we found that examining this detail was beyond the scope of our study. As we only discuss the angular momentum of the gas at the moment of entry into the halo, the gas is too far from the galaxy's disk at this point to be affected by tidal torques. The above recommendation would be a good future step for this study, but does not change the culminating result of this paper.

Minor Concerns/Comments

1. *The intro would benefit from more discussion about previous work on gas flows/angular momentum transport from galaxy to accretion-disk scales. Hopkins & Quataert (2010), which is cited but not discussed extensively, and follow-up works come to mind.*

We've extended our discussion of angular momentum transport in the Introduction. We include in our discussion, justification of major mergers as viable processes for gas influx and the caveat that gas flow processes in the inner \sim kpc are still under developed. [Talk to J/K, expand more?]

2. *The zoom-in region is stated to be "a few virial radii." It would be good to reassure the reader that this is sufficiently large; quoting the contamination fraction of the mass in the final halo contributed by low-resolution particles would be sufficient.*

[Jillian is adding this to Latex Doc; Talk to her about report justification.]

3. *Section 2, paragraph 4: please define c^* .*

We have added a definition for c^* within the specified section.

4. *S6, P6, "Given the strict adherence...": This statement is inaccurate and should be removed. None of the aforementioned observational constraints are directly related to BHs. There may be some connection if AGN feedback alters e.g. galaxy metallicities, but I doubt that AGN feedback has a strong effect on galaxies of this mass. So, it's completely possible that the star formation and stellar feedback models are reasonable (although I've expressed my concerns above) but the models for BH growth and feedback are not.*

Our intention with this statement was to describe that the simulations are in accordance with observations which leads us to feel confident about the results. We have adjusted this paragraph to clarify our meaning.

5. *S2, P8: Please clarify whether the accretion rate is Eddington-limited.*

The accretion rate is Eddington-limited. We have adjusted the text to clarify this fact.

6. *Figs. 3 & 4: it would be useful to include legends in these figures also so that the reader doesn't need to flip back and forth.*

Legends have been added to these figures. [Ask J/K; It seems like too much to have legends on both? Should I just have it on figure 3?]

7. *Presumably the short author list should be Sanchez et al.*

The short author list has been fixed.

8. *I prefer italics to bold face if one wishes to emphasize some part of the text.*

We have switched our emphasized text to italics.