

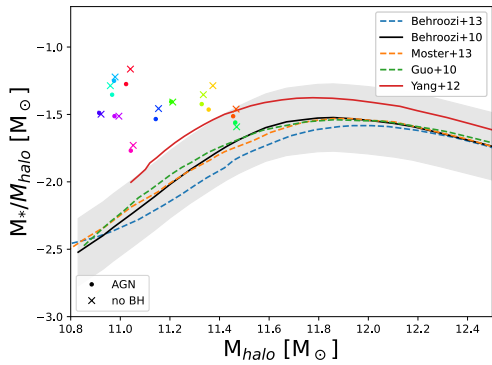
# The impact of AGN feedback in AURIGA dwarf galaxies

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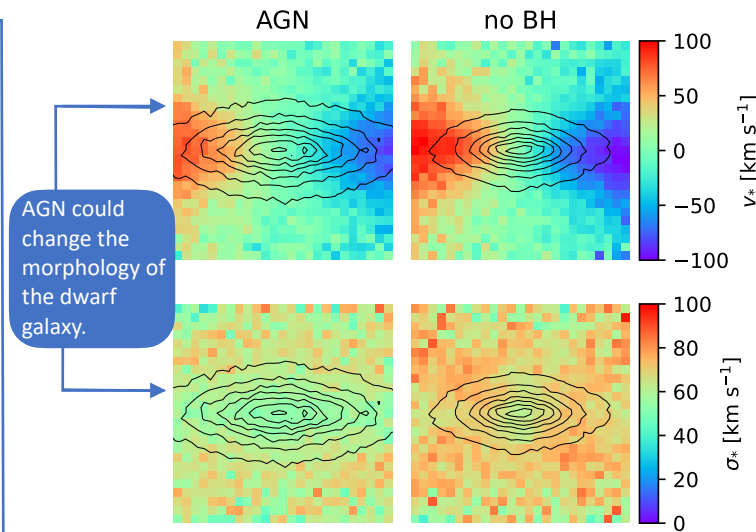
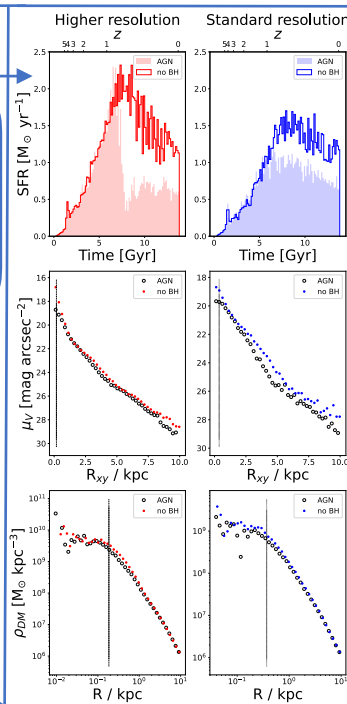
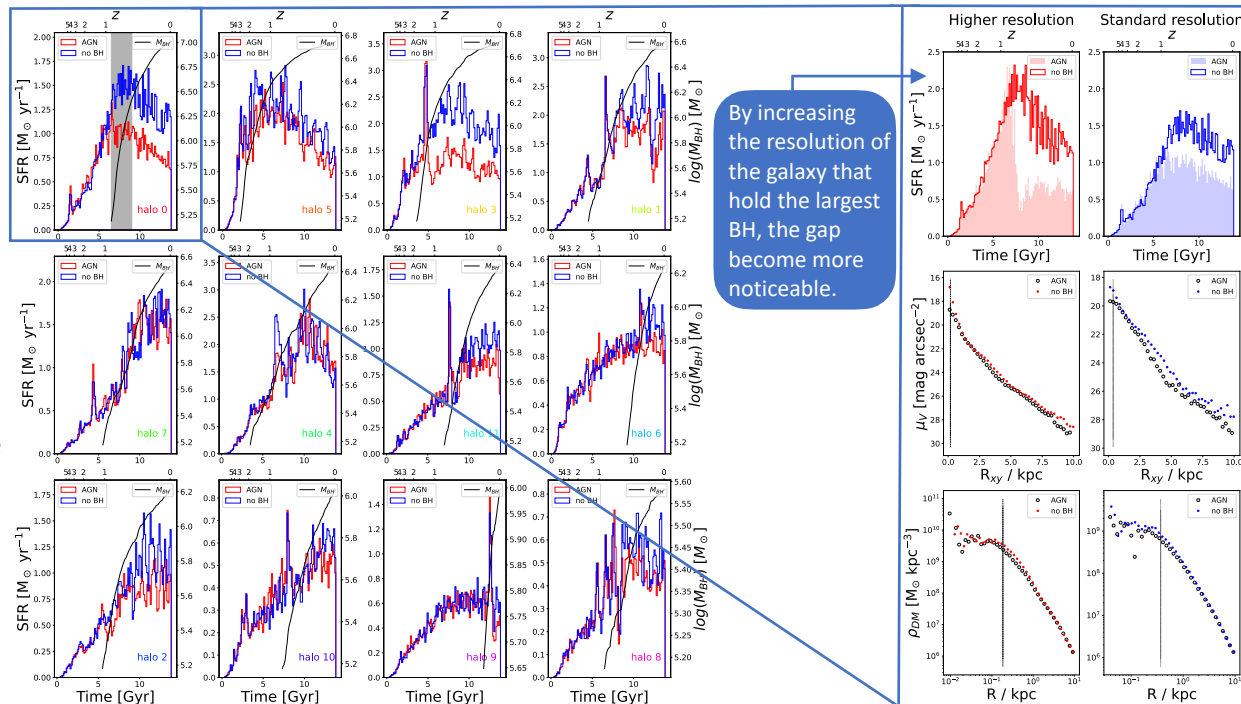


Recent observational studies suggest that<sup>[1][2][3]</sup>, contrary to the standard thought<sup>[4]</sup>, feedback from active galactic nuclei (AGN) plays an important role in the formation and evolution of dwarf galaxies. Zoom-in hydrodynamical simulations are valuable theoretical tools to investigate the physical effects of AGN on the formation and evolution of low-mass galaxies, with several theoretical studies already providing promising results that seem to challenge the current paradigm of galaxy formation<sup>[5][6]</sup>. To better understand how AGN affect dwarf galaxies, we present results from a new study using a set of 12 simulated dwarf galaxies run with the successful Auriga galaxy formation model<sup>[7]</sup> both with and without AGN feedback to cleanly isolate their effects.



✓ Dwarf galaxies with AGN tend to have less stellar mass than their counterparts.

✓ The gap in the SFH increase with the mass of the black hole.



AGN could change the morphology of the dwarf galaxy.

✓ Dwarf galaxies without black hole are faster rotators<sup>[8]</sup>.

✓ The configuration without AGN makes the galaxy more compact.

## Future work

- Analyze the effect of AGN in different galaxy formation models.
- Understand the dependence of numerical resolution.
- Making observational predictions to test models and galaxy evolution scenarios.



✓ The inner part of the galaxy is denser for the configuration without the black hole.

✓ Brighter profile for the galaxy without black hole.

## References

- [1] Mezcua et al. 2018
- [2] Latimer et al. 2021
- [3] Davis et al. 2022
- [4] Benson et al. 2003
- [5] Koudmani et al. 2021
- [6] Sharma et al. 2021
- [7] Grand et al. 2017
- [8] Waterval et al. 2022