The morphological transformation of ram pressure stripped galaxies

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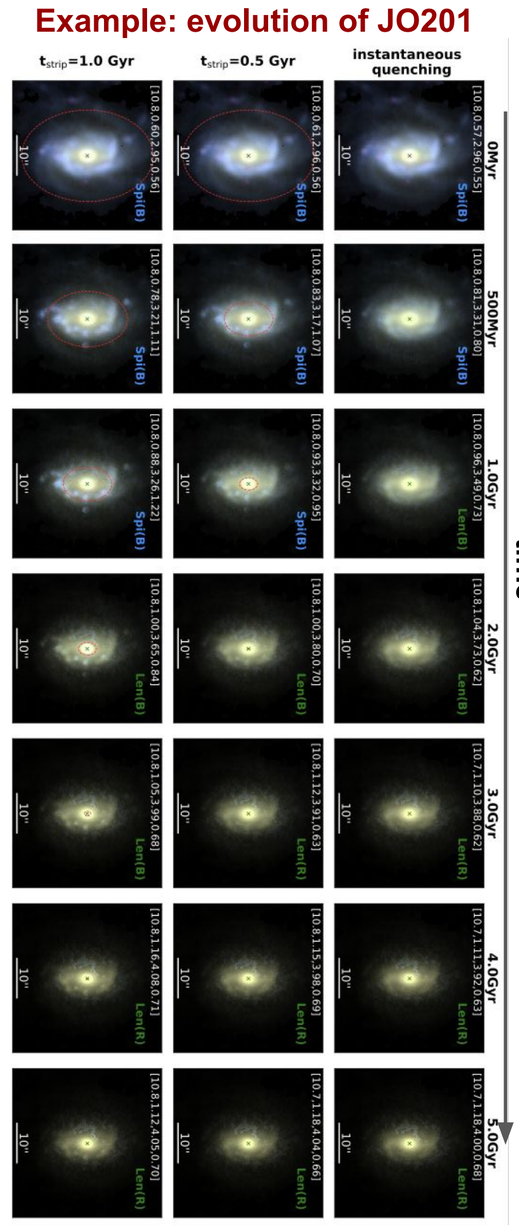
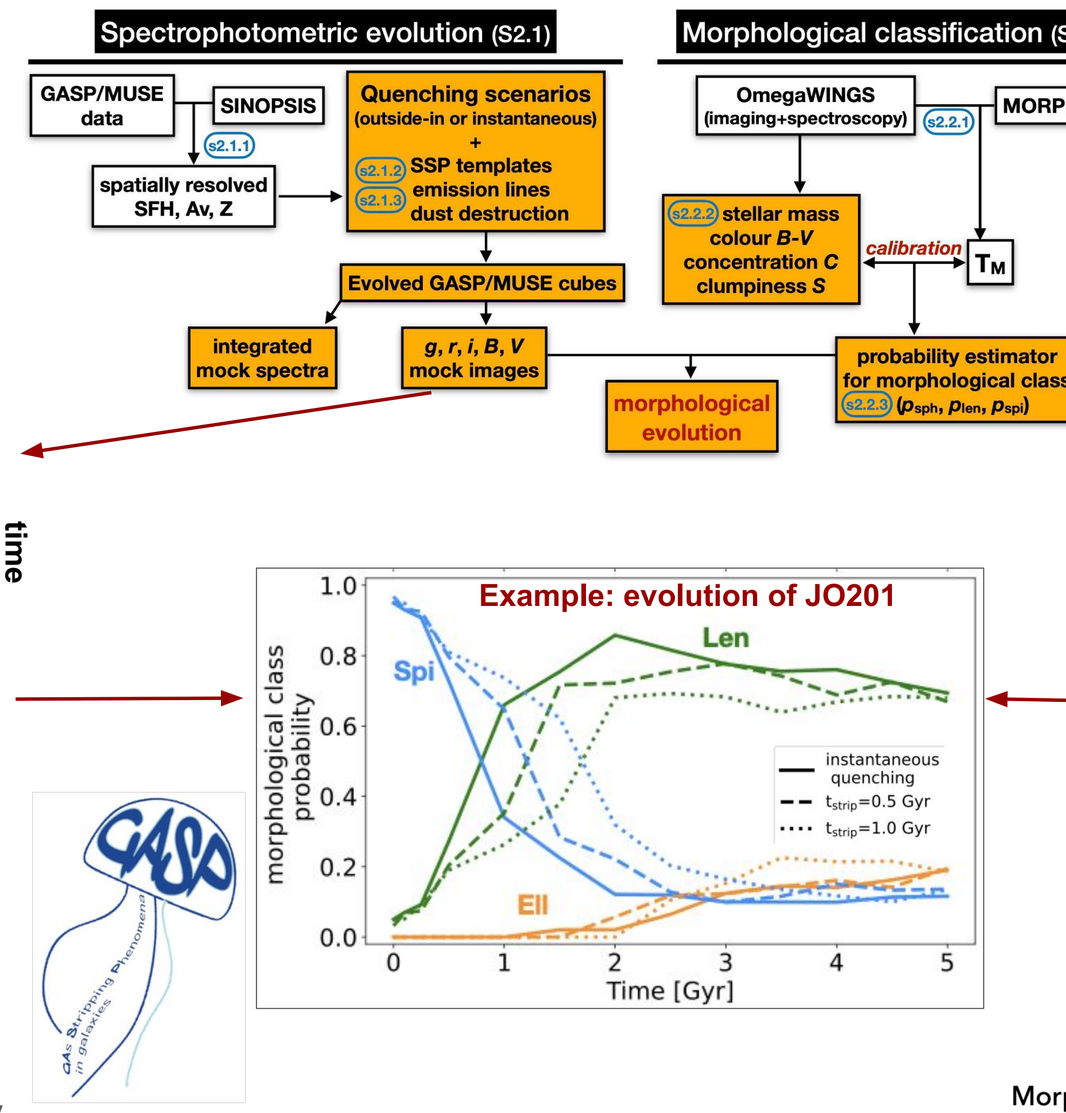
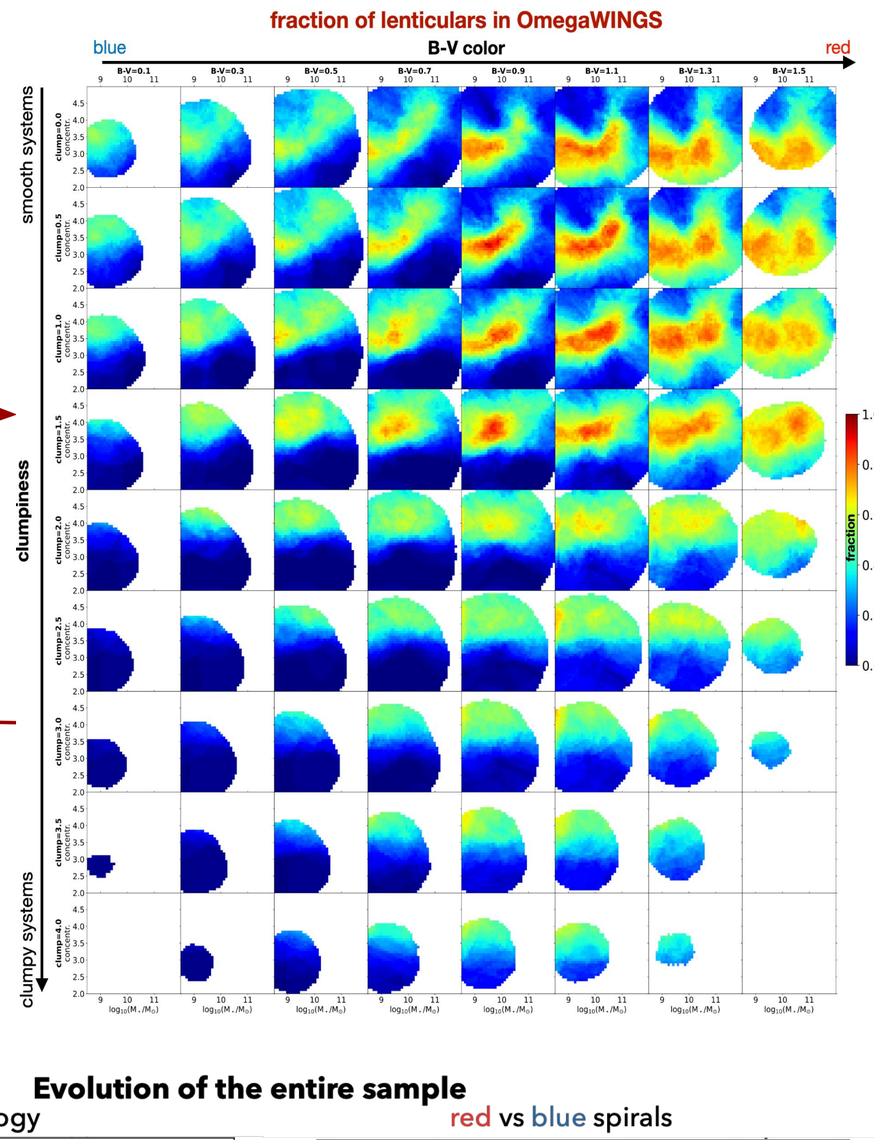
(MNRAS, 525, 5359)

Motivation. Cluster galaxies have been subject to a major redistribution of their morphology fractions in the last 6-8 Gyr, with the spiral population steadily fading out in favour of the S0s (lenticulars). The question of what is the primary mechanism responsible for such fast transition has still no answer.

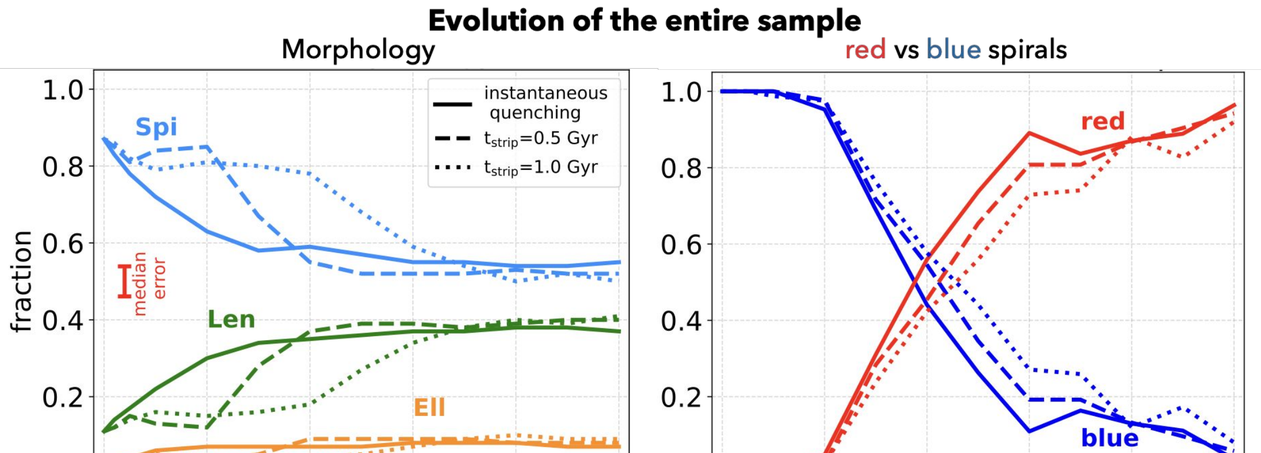
Method. We quantify the effect of stellar "ageing" in driving a morphological transformation in ram-pressure stripped cluster spirals. We use a sample galaxies from the **GASP** program with known spatially resolved star formation history from MUSE data. We simulate their future evolution assuming outside-in quenching scenarios with different stripping timescales, artificially age their spectra, produce synthetic multi-band images and infer the variation of their morphology at future times.





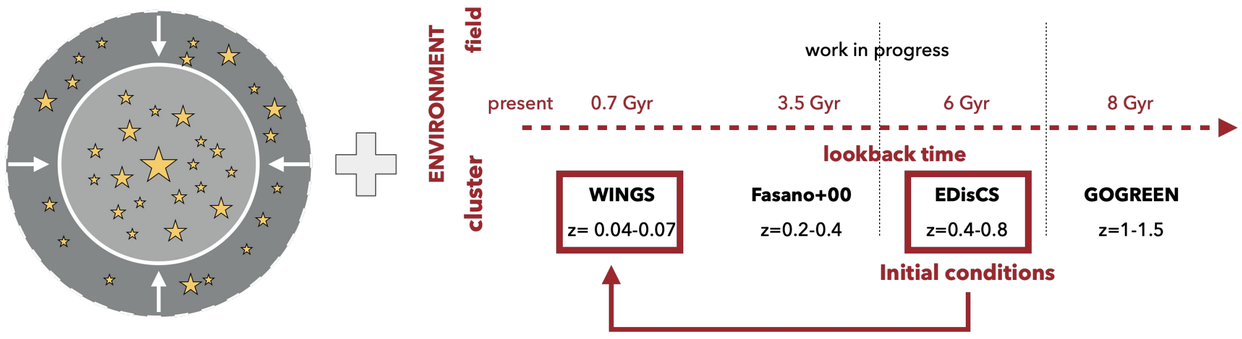


Results. in all scenarios, the initial population dominated by blue-cloud spirals (~90%) evolves into a mixed population mostly composed by red-sequence spirals (50−55%) and lenticulars (~ 40%). The transformation is completed after just 1.5 − 3.5 Gyr, proceeding faster in more efficient quenching scenarios.



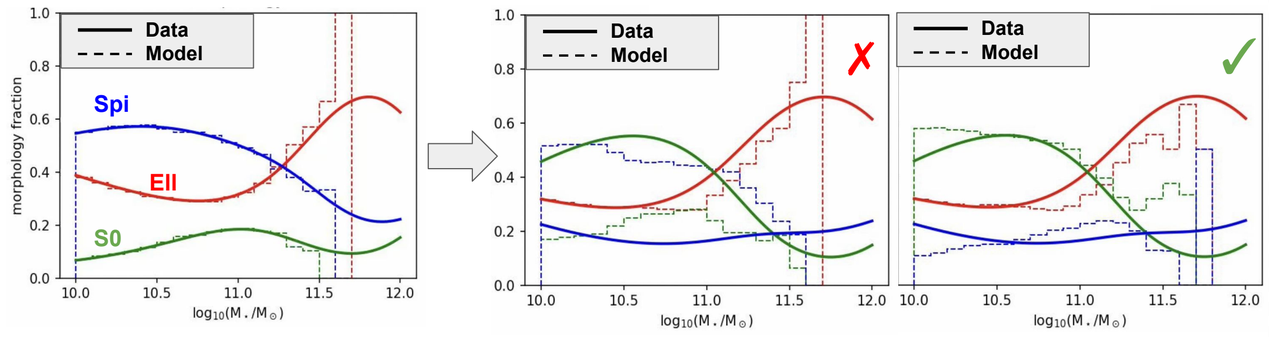
Future prospects

Modelling the evolution of a realistic cluster population



Cluster accretion history

Morphology evolution history



Cluster-driven morphological evolution required to reproduce the data!

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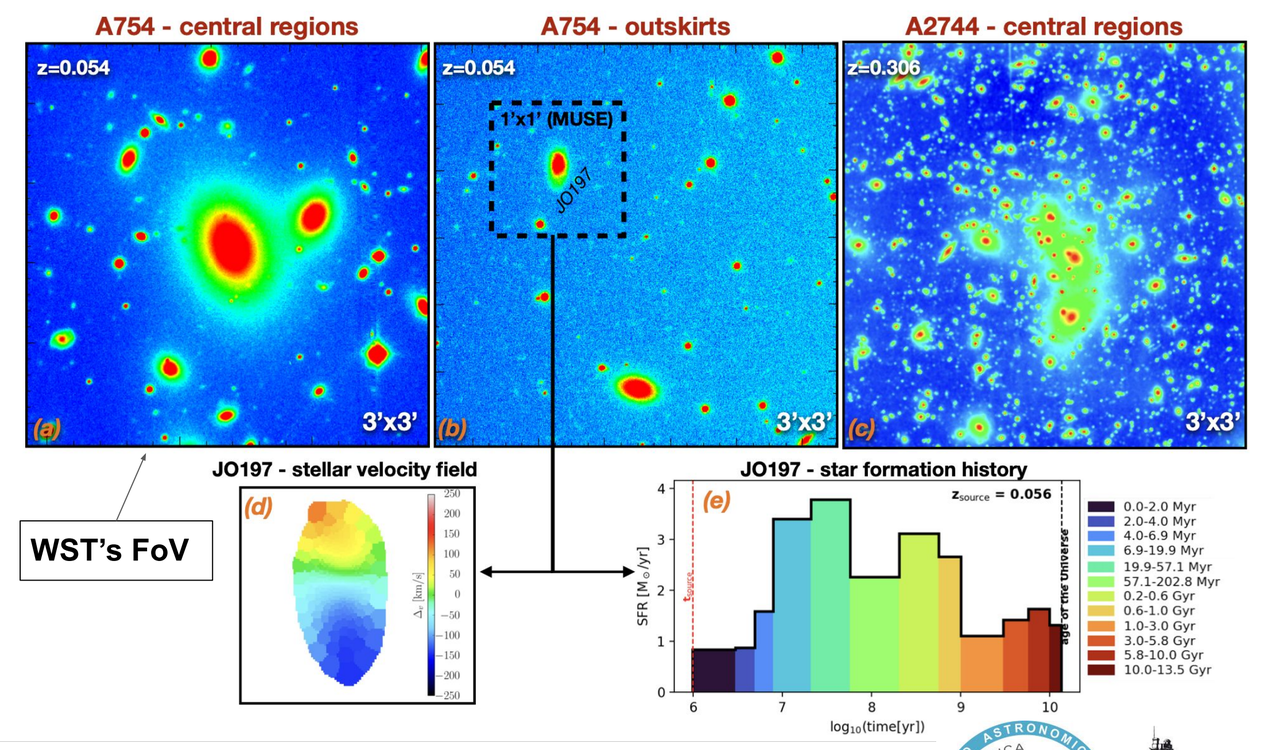
Understanding the morpho-kinematic evolution of the galaxy cluster population from z~0.3 to z~0.06 with the *Wide-Field Cluster Telescope*



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