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Shaping massive galaxies: the structural evolution of galaxies across $0 < 1$

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Propositions
accompanying the thesis

Shaping Massive Galaxies

The structural evolution of galaxies across $0 < z < 1$

1. Quiescent and star-forming galaxies lie on a single, tight Fundamental Plane that does not evolve between $0 < z < 1$ (Chapters 2 & 3).
2. At fixed dynamical mass, the variation and evolution in the dynamical mass-to-light ratio are dominated by differences in the stellar population properties of galaxies rather than their structural properties (Chapter 2).
3. State-of-the-art cosmological simulations still struggle to reproduce some of the most basic properties of observed galaxies (Chapters 4 & 5).
4. The existence of one Fundamental Plane for all galaxies can be explained by a systematic dependence of the central dark matter content on the galaxy size and stellar mass (Chapter 5).
5. The population of astronomers should be described as a continuous spectrum, rather than a bimodal distribution of observers and theorists.
6. There is an important place for spatially-integrated measurements of galaxy dynamics, even in the era of integral field spectrographs.
7. As more data are collected every day, a great wealth of discoveries remain hidden in the archives.
8. Minimising in-person meetings and conferences for the sake of a reduction in our CO₂ footprint forms a dual punishment for the generation of junior researchers.
9. The modern-day PhD programme should include a mandatory 3-6 month internship in industry.
10. To run away from your problems can be a valid and effective approach to resolving a situation.
11. “Mindful research” should become the next major hype.

Anna de Graaff
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