

Bar-driven evolution of fast rotators: the role and fate of bars in early and late-type galaxies

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Abstract. We have performed state-of-the-art high resolution simulations of early-type galaxies with bars, including (multi-phase) gas, star formation and feedback. The aim of this programme is to better understand the observed morphology, kinematical structures, (2D) metallicity distribution, observed in fast rotators with bars. Our simulations were designed via a newly developed code allowing us to build a library of initial conditions closely mimicking barred galaxies in the Atlas3D sample. We will present the role and importance of bars on the gas fueling, redistribution of angular momentum, and overall secular evolution of fast rotators. These results are compared with actual observations (IFU, CO maps, stellar population distributions) obtained in the course of the Atlas3D project. The results from these “early-type” simulations will also be compared in the context of recently conducted simulations of later-type barred galaxies, including one of a Milky-Way type object with a resolution down to 0.05 parsec.
