

Morphology and Dynamics of the Nuclear Region of NGC 4314

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We have conducted *VIJH* surface photometry and SPH simulations for an early type barred galaxy NGC 4314 in order to understand the interplay between the morphology and dynamics of the nuclear region of barred galaxies. Detailed analysis of the morphology of the nuclear region of NGC 4314 shows that the nuclear spiral is the nuclear ring which is partly obscured by the dust lanes of spiral pattern. Our SPH simulations in which mass models are constrained by the result of a detailed profile decomposition show that mass inflow due to the bar potential is very effective in NGC 4314. The young stellar clusters which are thought to be abundant in the nuclear ring of NGC 4314 indicate that the mass inflow is an ongoing process which leads to a recent massive star formation. The morphology of galaxies can be changed continuously in the Hubble time due to the secular evolution driven by the bars in barred galaxies.