MULTIPLE GASEOUS DISKS IN NGC 1052

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We present detailed velocity field of NGC 1052 in [NII]6583Å line obtained with scanning Perot-Fabry. Extended ionized gas was studied by Davies et al. (1986) showing a clear counter-rotation between ionized gas and stars. It is an E4 galaxy type with 'Boxy' isophotes (Nieto et al. 1991). Taking benefit from high spectral resolution and 2D mapping of Scanning PF, we have discovered several components in our profiles (Plana 1995). Their study shows two main gaseous components: a first one with a Major Axis at PA=45° and a second one at PA=30°. The ionized gas extension is approximately 40" for the first component and 20" for the second. The main component contains 100 times more gas than the second one.

The two gaseous components are counter-rotating with respect to one another with approximately the same velocity amplitude ($\sim$ 150 km/s). There is strong evidence for a triaxial shape. In order to derive the intrinsic galaxy shape and viewing angles of gas disks, we use the model described by de Zeeuw and Franx (1989) based on Stäckel potential. Using Bertola's representation (1991), we are able to determine possible values of viewing angles θ and ϕ and possible values of axial ratios $\frac{b}{a}$ and $\frac{c}{a}$ for both components. We can consider component 1 in XY plane and component 2 in ZY plane with $5° < \phi < 15°$, $\theta = 56°$ (plane XZ is forbidden by theory). But computation of axial ratios does not show consistent values for this hypothesis.

In conclusion, NGC 1052 shows 2 counter-rotating gaseous components, one is a disk lying in the perpendicular longest axis plane and the second seems to be a polar ring precessing in the perpendicular shortest axis plane.

References

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