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M87 the galaxy with imaged Supermassive BH

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M87 is the biggest nearby galaxy located at the center of the Virgo cluster.

It hosts multiple kinematic tracers that have recently allowed a very good determination of its mass distribution from the very center up to the virial radius.

In this work, we approach the question by adopting the Burkert halo profile for the dark matter which well represents the dark matter halos around spirals and some ellipticals.

We found that the mass model including a such halo plus a standard Nuker stellar spheroid, well fits the gravitating mass.

The galaxy extends out to a virial radius of 1.3 ± 0.2 Mpc, with a virial mass of $(1.3 \pm 0.3) \times 10^{14} M_{\text{sun}}$. It shows a very huge core with a radius of 91.2 ± 9.0 kpc and a central density $(6.9 \pm 1.4) \times 10^6 M_{\text{sun}}/\text{kpc}^3$.

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