

A portrait of Malin 2: a case study of a giant low surface brightness galaxy

0. Data:

BVR- and griz-images (APO, SDSS, GMOS-N), GALEX, HI, CO and long-slit spectra of APO and GMOS-N (minor axis).

1-3. Steps:

- model of the spectral energy distribution (SED) gives exponentially declined star formation history, M/L estimates;
- mass model gives dark halo parameters ($\rho_0 \sim 0.003 M_{\text{sun}}/\text{pc}^3$ and $R_c \sim 27.3$ kpc);
- spectra gives decoupled kinematics of stars and gas in the very inner region ($r \approx 5-7$ kpc).

4. Gas imbalance due to specific ISM structure:

- an excess of low-mass molecular clouds;
- a higher fraction of unobserved *dark gas*.

5. Evolutionary model:

- no need to assume a catastrophic scenario;
- the peculiar properties of this galaxy can be explained by the *shallow potential well of the host dark halo* and by a *poor gas environment* when the disc was formed.

