

Two – dimensional kinematics of the central region of NGC4501, NGC 3982 and NGC2787 from GMOS/Gemini integral field spectroscopy

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Introduction

We present two-dimensional (2D) maps for emission-line fluxes and kinematics for the central region of the active galaxies NGC 4501, NGC 3982 and NGC 2787 obtained from optical GMOS-IFU data.

	Activity Type	Spectral Resolution	Spacial Resolution
NGC 4501	Seyfert 2	2,7Å	~50 pc
NGC 3982	Seyfert 2	2,5Å	~30 pc
Ngc 2787	Liner	2,5Å	~30 pc

Observations and data reduction

The IFU data were obtained with GMOS-IFU in the two-slit mode. The selected wavelength range was 5600Å – 7000Å and the grating R400-G5305 was used. The data consist of three adjacent IFU fields (converging 5 x 7 arcsec² each) for NGC4501 and NGC 3982 and two fields for NGC 2787.

Results

NGC 4501

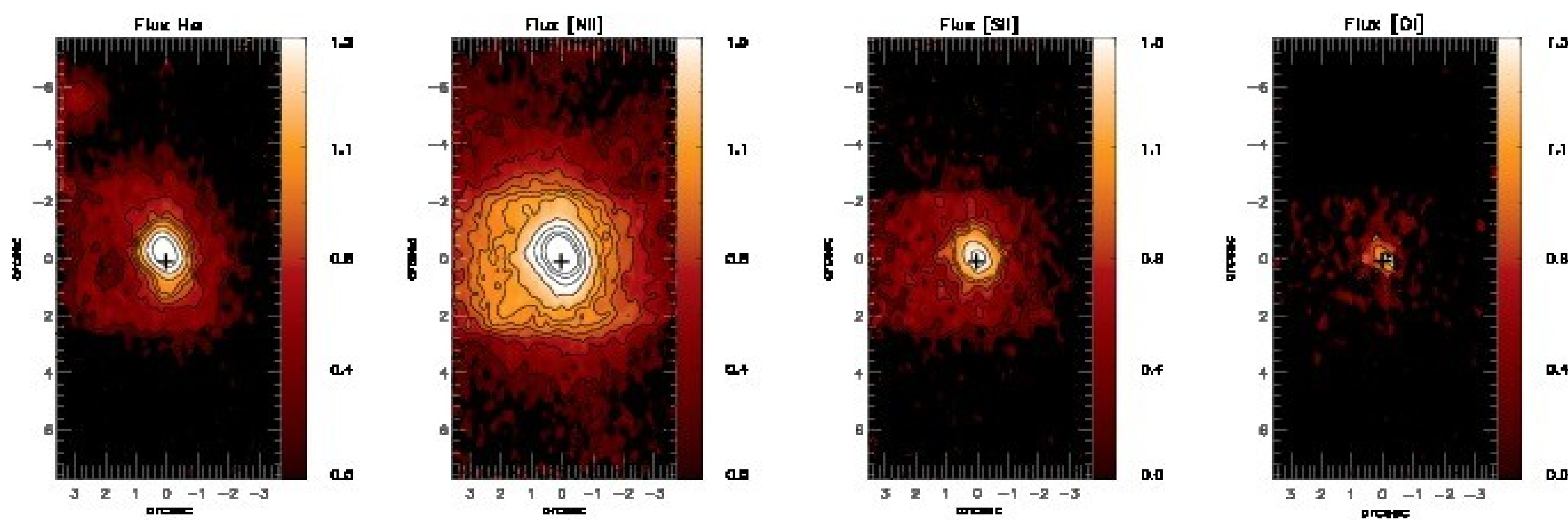


Fig. 1: Flux maps for the H α , [NII] λ 6583, [SII] λ 6730 and [OI] λ 6300 emission lines obtained by the fitting of the emission-line profiles by Gaussian curves. Fluxes are shown in units of $10^{-17} \text{ergs}^{-1} \text{cm}^{-2}$.

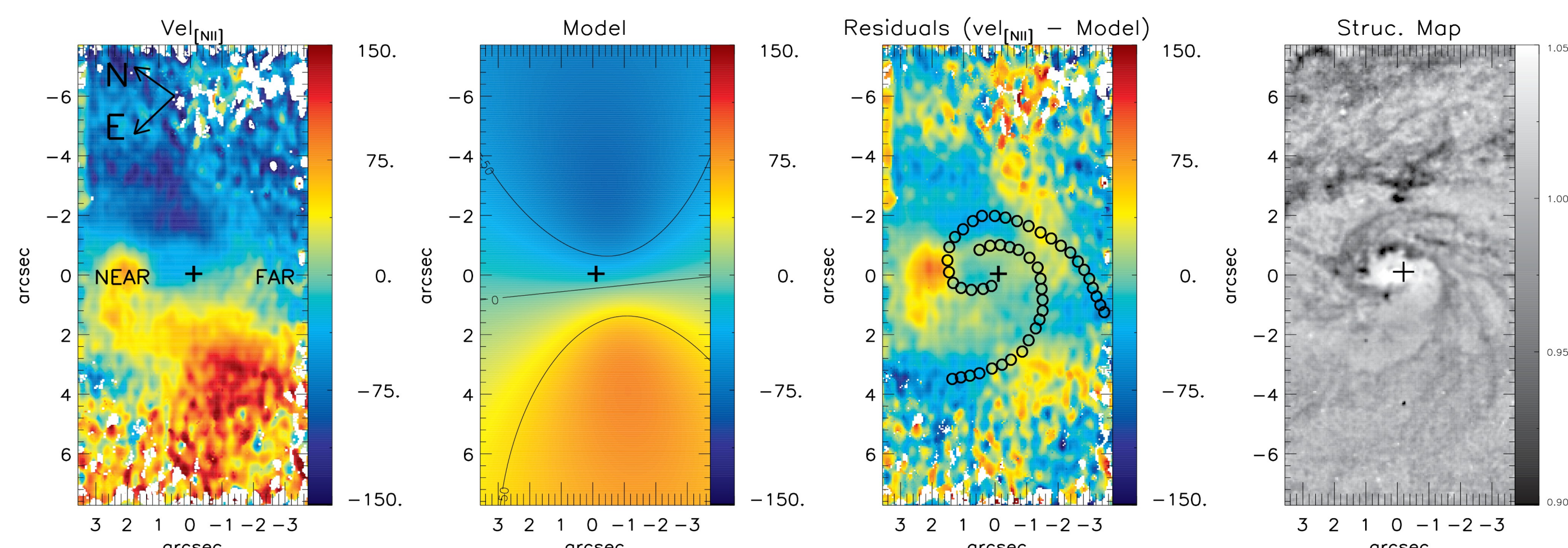


Fig. 2: Top from left to right: [NII] velocity field, rotating disk model fitted to the data, residuals map (observed velocities – model) and structure map. The color bars show the velocities in km/s.

NGC 3982

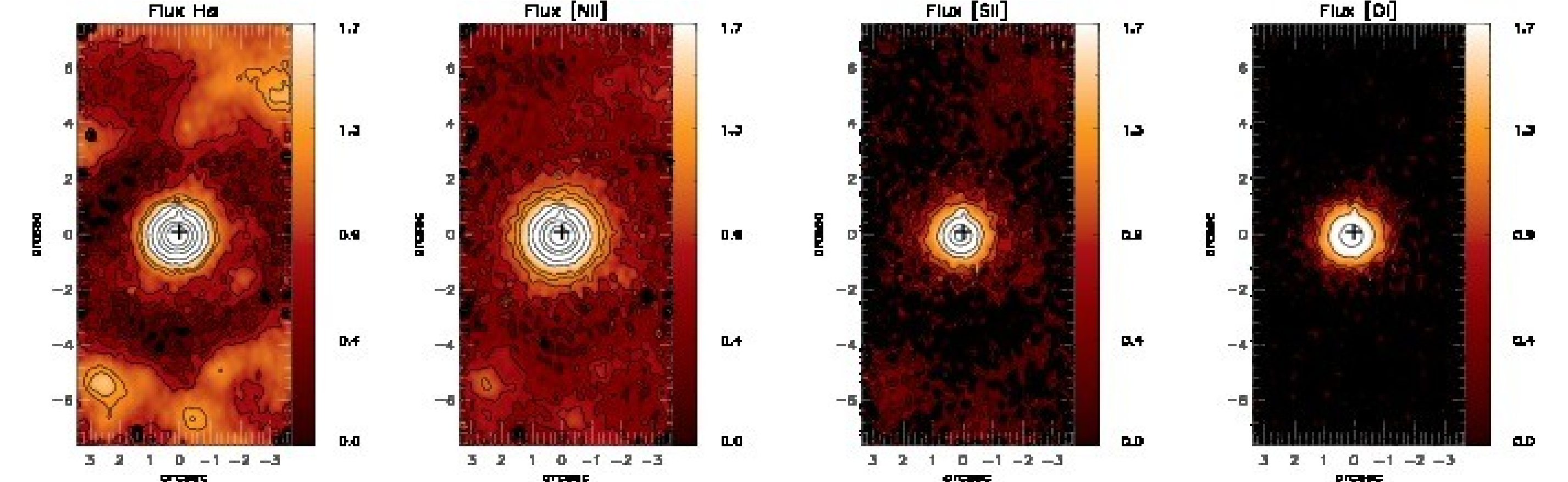


Fig. 3: Flux maps for the H α , [NII] λ 6583, [SII] λ 6730 and [OI] λ 6300 emission lines. Fluxes are shown in units of $10^{-17} \text{ergs}^{-1} \text{cm}^{-2}$.

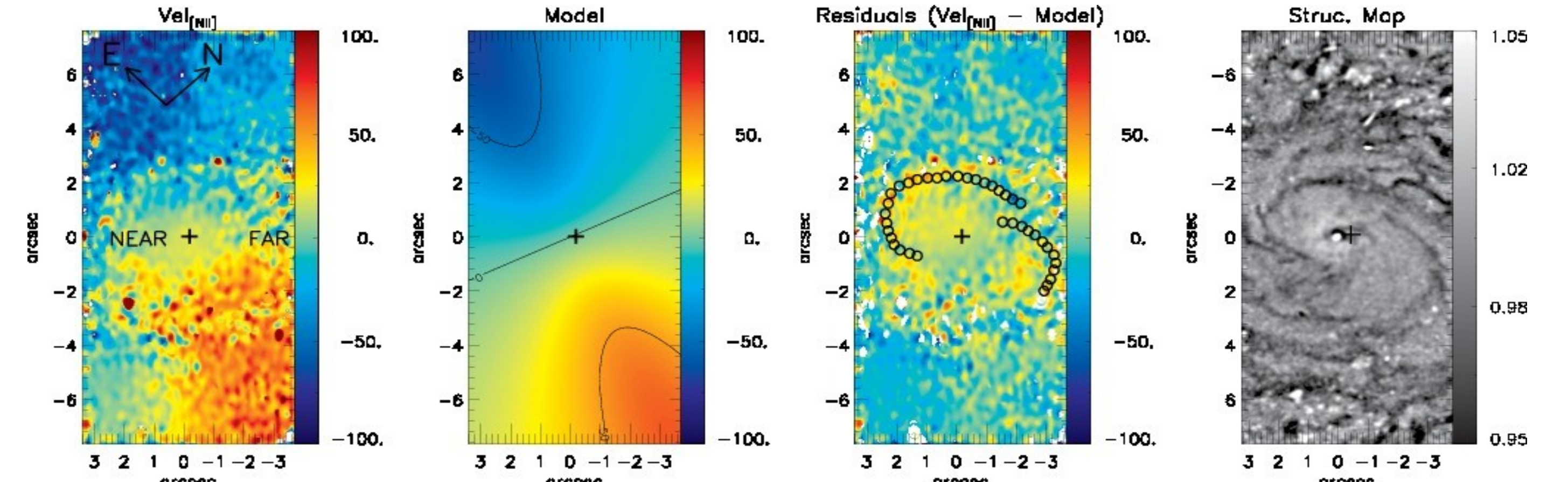


Fig. 4: Top from left to right: [NII] velocity field, rotating disk model fitted to the data, residuals map (observed velocities – model) and structure map. The color bars show the velocities in km/s.

NGC 2787

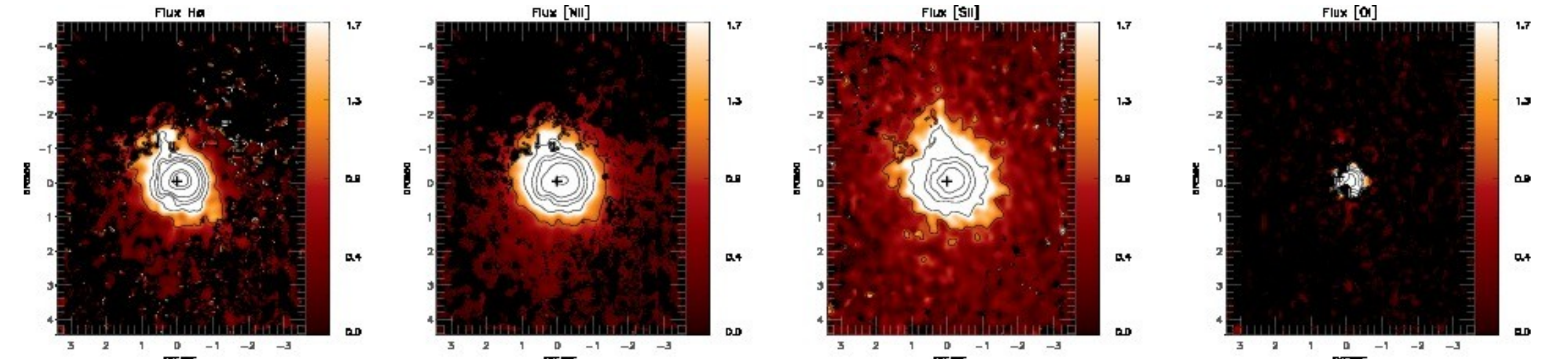


Fig. 5: Flux maps for the H α , [NII] λ 6583, [SII] λ 6730 and [OI] λ 6300 emission lines. Fluxes are shown in units of $10^{-17} \text{ergs}^{-1} \text{cm}^{-2}$.

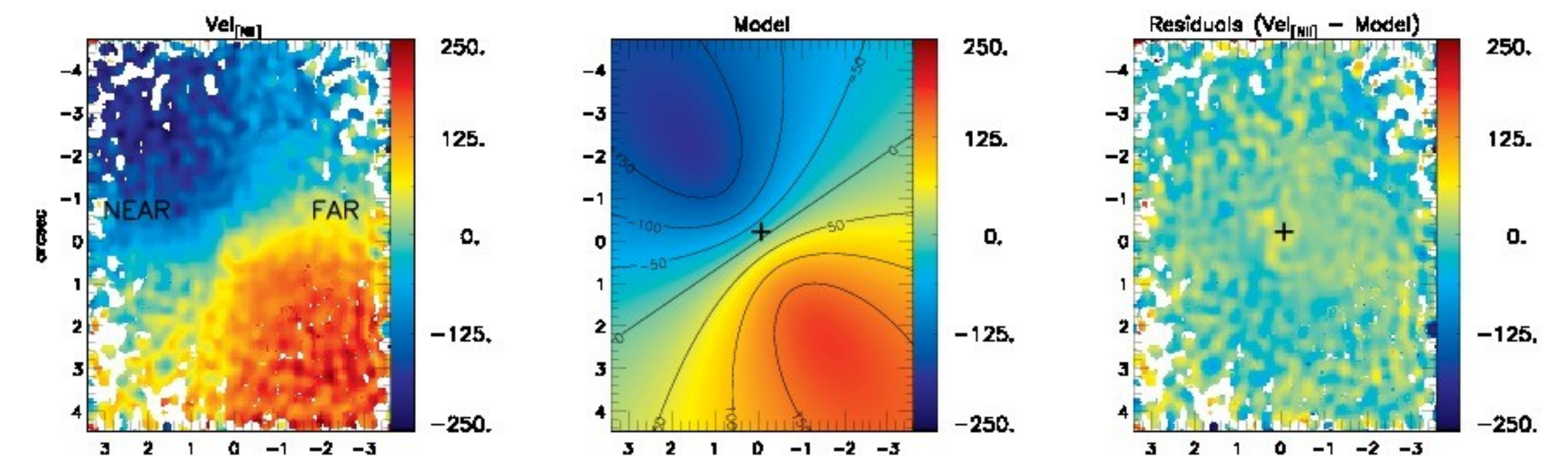


Fig. 4: Top from left to right: [NII] velocity field, rotating disk model fitted to the data and residuals map (observed velocities – model). The color bars show the velocities in km/s.

Conclusions

The line emission in the three galaxies is dominated by gas emission rotation at the plane of the galaxies. For NGC 4501 and NGC 3982, distortions of the velocity fields are observed in association to dust structures in the structure map.

These associations could support a scenario in which nuclear spirals are channels through which matter is transferred from galactic scales to the nuclear region to feed the supermassive black hole, as observed for other galaxies.