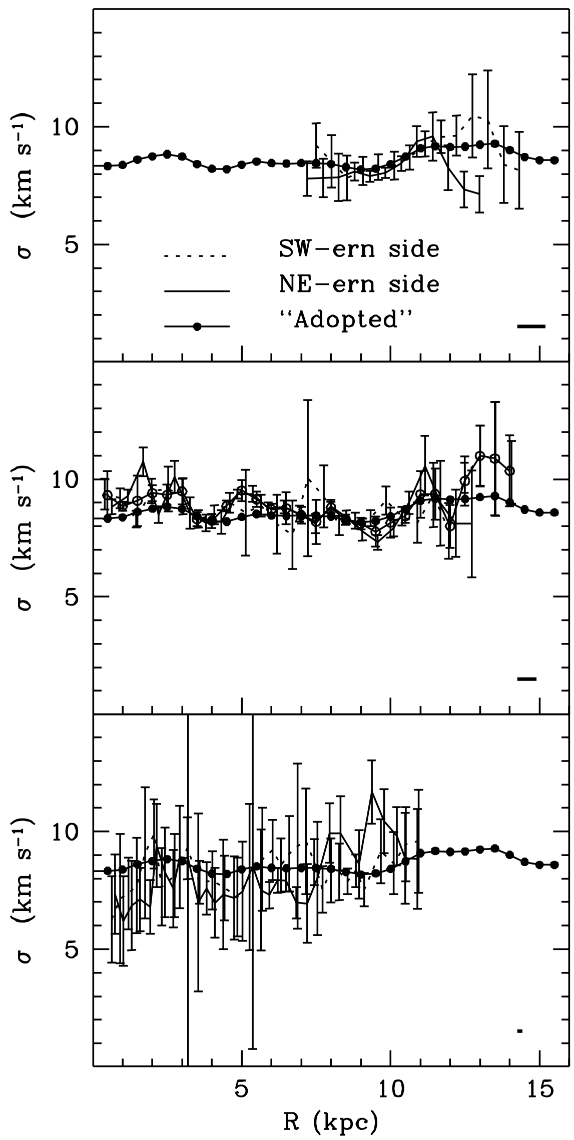

Fig. 22.— The beam-smearing corrected [using Eqns. (64) and (65)] tangential velocity dispersion as derived from the high (10$''$.1x10$''$.1), intermediate (38$''$x38$''$) and low (55$''$x55$''$) XV-plots (bottom, middle and top panel respectively). The south-west-ern, north-eastern, and adopted average curves (see the caption of Fig. 31) are indicated by the dotted line, the dotted full line and the filled circles respectively. The measurements are consistent with a constant velocity dispersion of roughly 8.5 km/s. The fat horizontal bars in the lower right corners indicate the size of the beam.

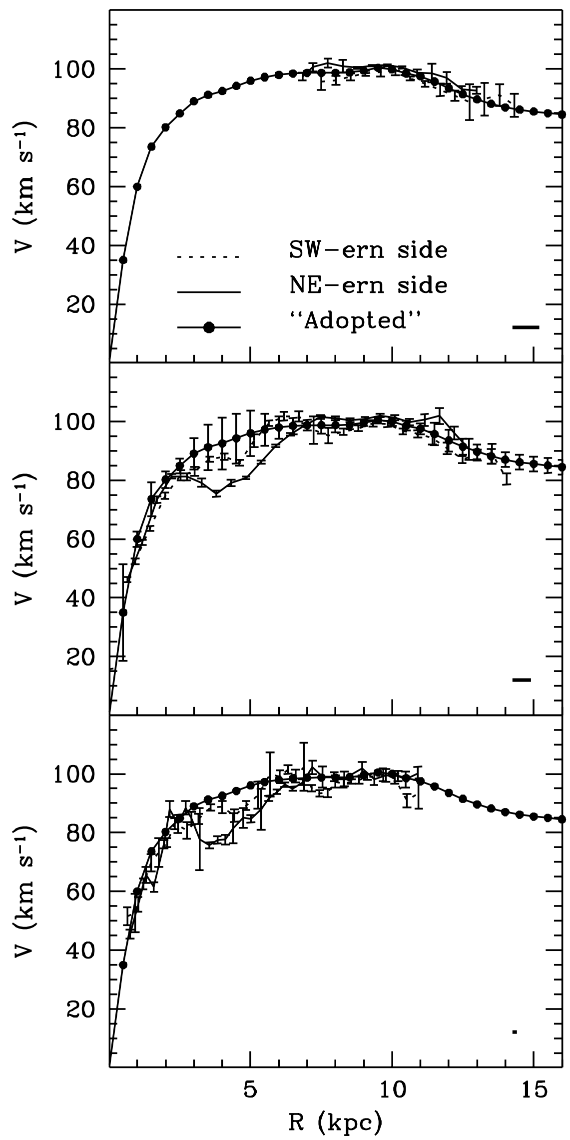

Fig. 23.— The beam-smearing and velocity dispersion corrected [using Eqns. (66) and (67)] rotation curve for the two sides of the galaxy. For an explanation of the symbols, see Fig. 22.

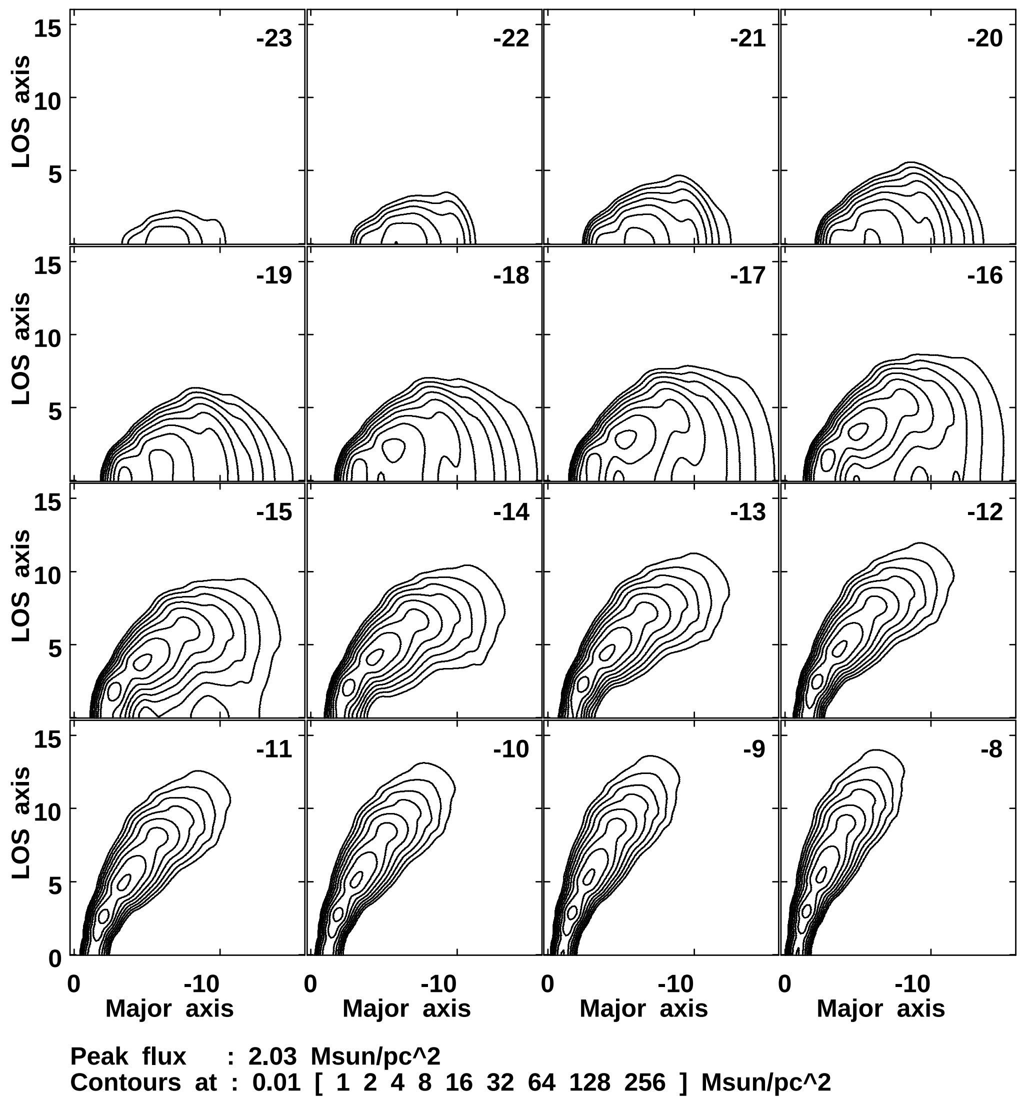

Fig. 24.— This figure shows a representative set of CSDDs. The channel numbers are shown in the top right corner of each panel. As the CSDDs are symmetric with respect to the major axis (the horizontal axis), only one quadrant is displayed. The vertical axis of each plot represents the distance along the line of sight (LOS axis). The contours represent the effective column density a given channel is sensitive to. In this coordinate system, the observer would be located at $(0, -\infty)$. We clearly recognize the wedge-like structure valid for the simple model galaxy, however, the wedges have become wiggly and curve back towards the major axis (as a result of the declining rotation curve). For channels close to the extreme velocity channel (-19), the gaseous velocity dispersion broadens the wedges significantly, and fills up the gap between the near and far side.

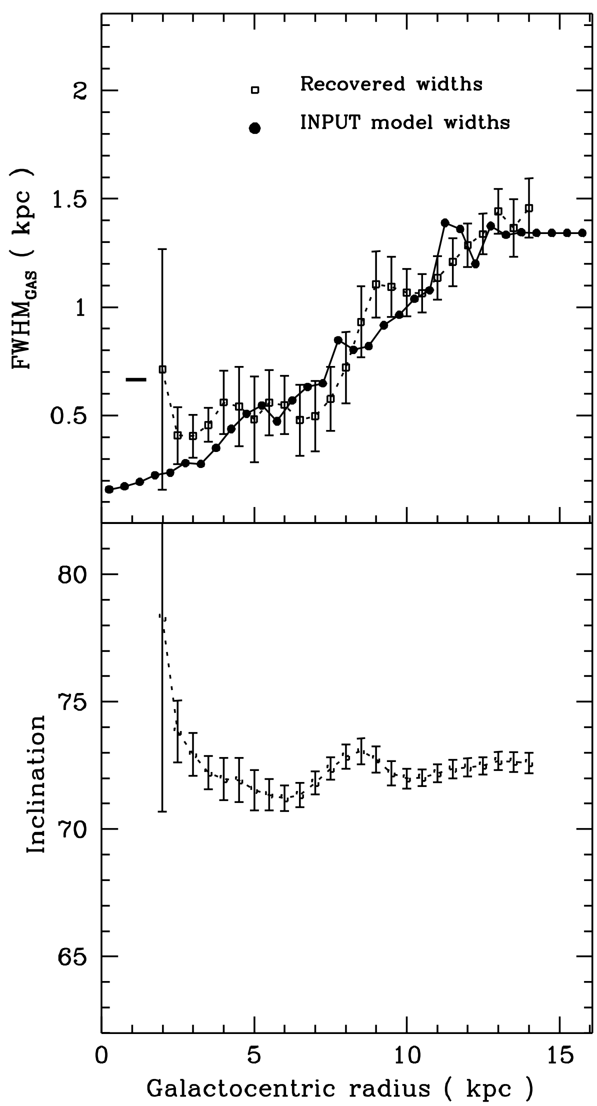

Fig. 25.— The results of simulated VLA H I spectral line observation of a model galaxy like NGC 4244, inclined by 72^{o} . The simulated spectral line cube is processed in the same manner as the observations of NGC 4244. The recovered inclinations are shown in the lower panel, while the recovered widths are presented in the top panel. The filled circles represent the input model widths. No noise was added to the simulated spectral line cube.