Merging of Low and High Resolution Data

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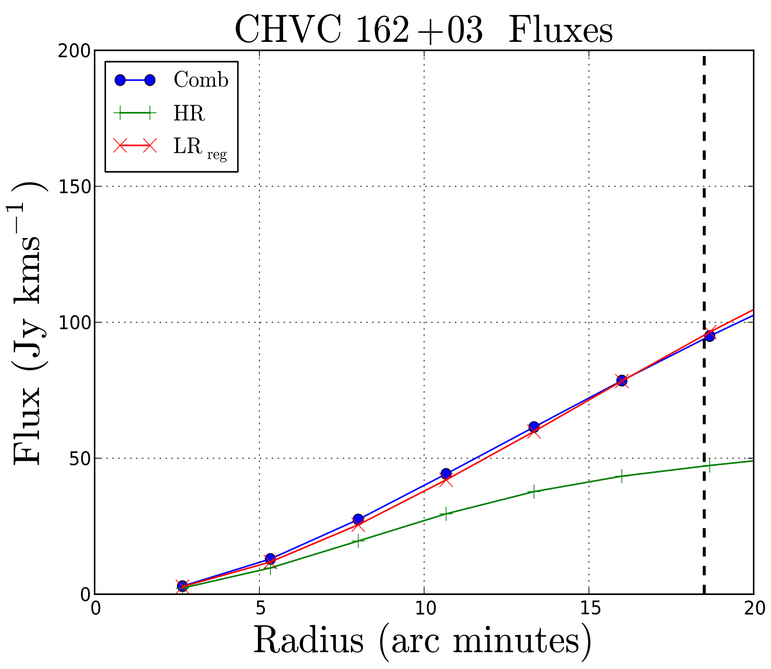
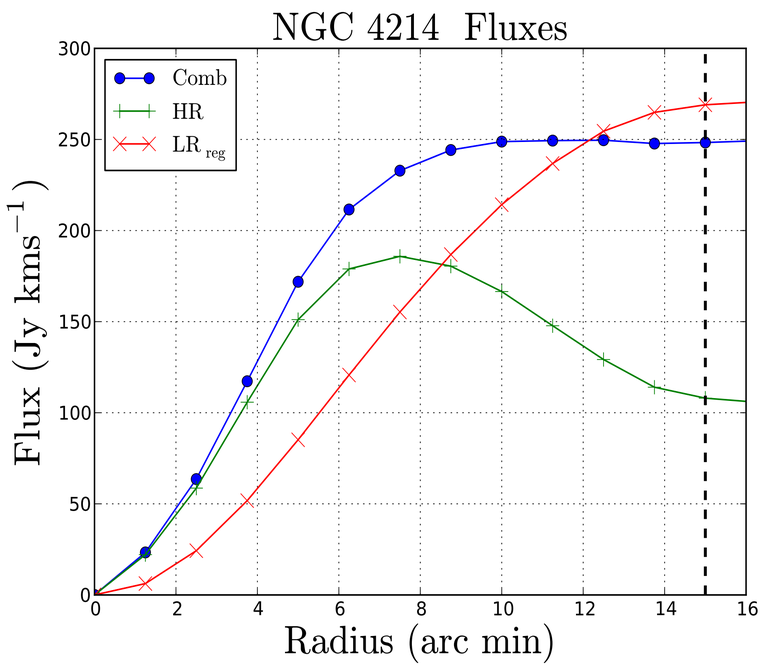
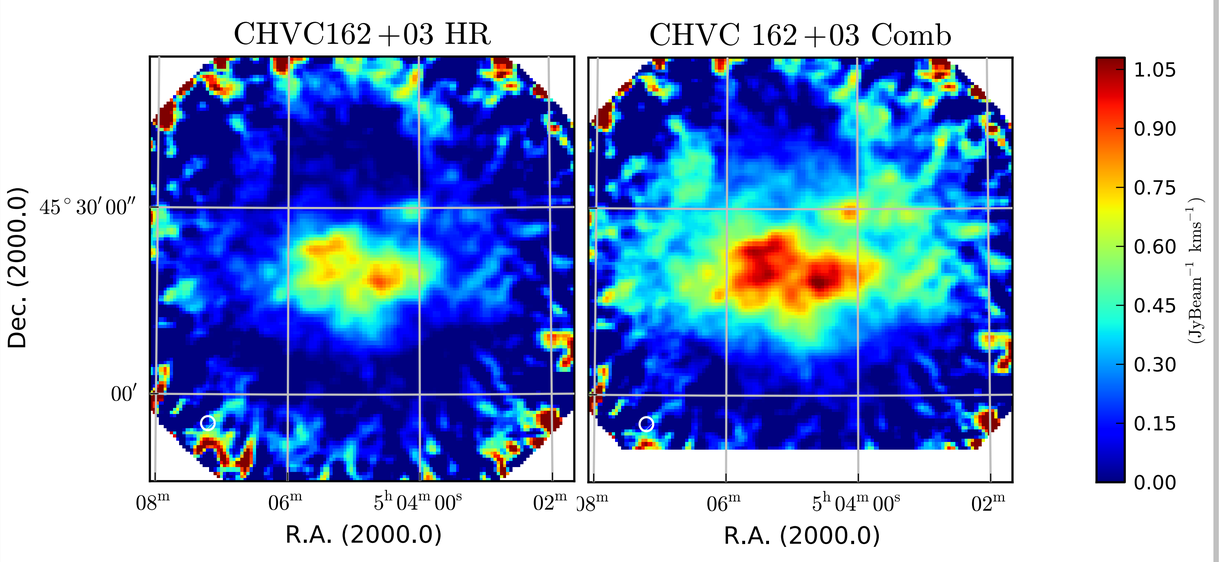


We use both low and high resolution data obtained with the 100-m Effelsberg telescope (EBHIS), the WSRT and VLA (THINGS). The combination of both data sets is essential in order to study the physical properties of the objects. Shown here are the cumulative fluxes as a function of distance from the field center. The dashed line marks the extention of the primary beam of interferometer. In case of CHVC 162+03 (left panel), about 50% more flux has been detected by the single-dish than by the radio interferometer. It reveals that a large portion of the cloud consists of WNM which is traced mainly by the single-dish. In case of NGC 4214 (right panel), plot demonstrates the dominance of the cleaning artifacts around the galaxy. These negative values affect the result of the combination severely.

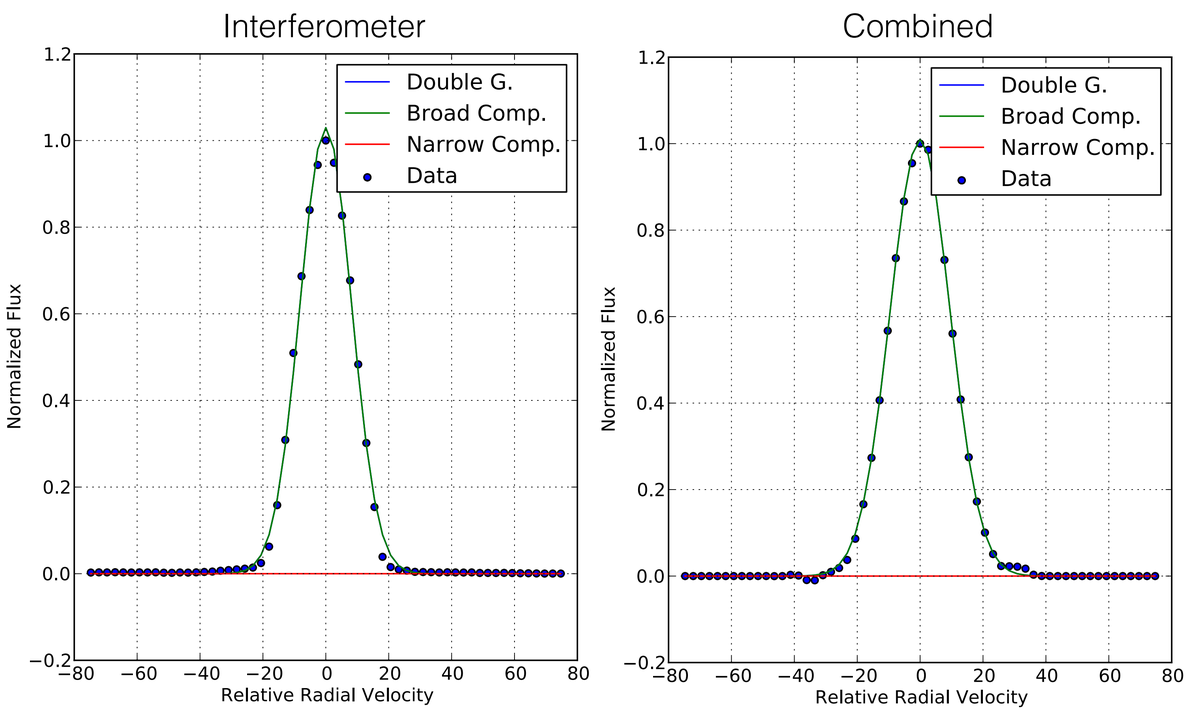


Galactic Data

We present deep HI observations of the compact high velocity clouds CHVC 162+03. We use both low and high resolution data obtained with the 100-m Effelsberg telescope and the WSRT respectively to study the diffuse warm gas and compact cold core. We combine the cleaned radio interferometric and the single-dish data in the space domain applying a linear approach. This allows us to recover both the whole flux and the highest angular resolution (Faridani et al, 2013). This study of CHVCs underlines the importance of the short-spacing correction for the analysis of the morphological properties of HVCs. Here in particular the warm neutral medium is of major interest.

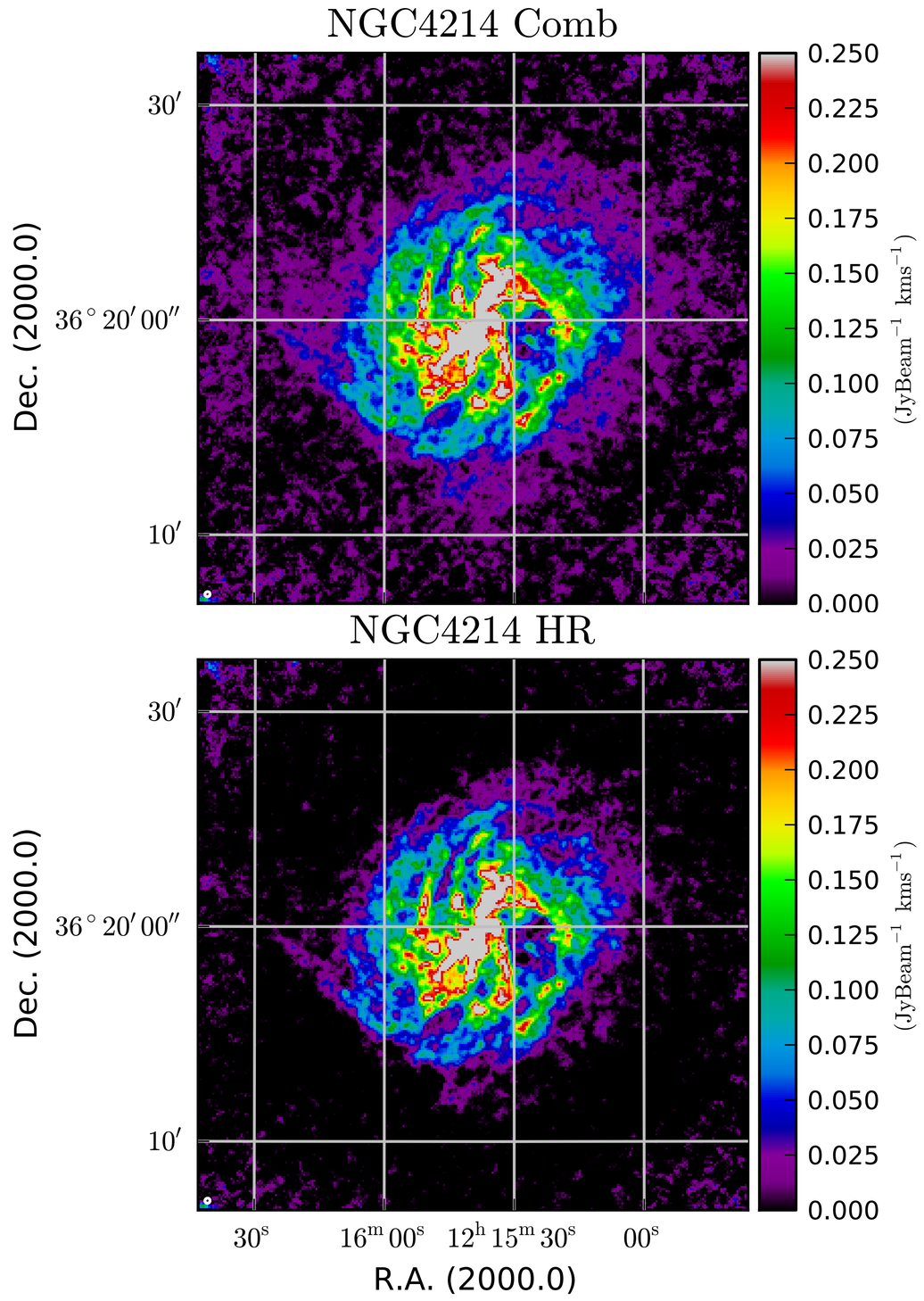


Head tail clouds often show a two-phase medium (Brüns et al. 2000; Westmeier et al. 2005). In case of CHVC 162+03, the small scale structure detected by the radio interferometer also might trace denser and probably cooler gas. A two-component Gaussian decomposition of the HI data is a useful approach to separate quantitatively these two gas components. We use a technique similar to the introduced super profiles by Ianjamasimanana et al. (2012). We find consistently only warm gas without any evidence for a cold neutral medium in both Interferometric and combined data set.



Extra-Galactic Data

In the upcoming era of radio interferometers single-dish instruments still play a major role. These are the only instruments which are able to detect the total flux of the source. Because of the „missing spacing“ problem of the radio interferometers an approach is needed to correct for the missing HI emission.



Short-spacing correction is not only important to determine the total flux and HI mass of a galaxy, it also plays a significant role in the analysis of the velocity distribution and dynamics of the galaxy. The extra-galactic data of EBHIS provides appropriate data sets to approach the short-spacing problem for the 29 objects of the THINGS galaxies. In addition, having a big ensemble of various objects allow us to study the impacts of different imaging parameters e.g. weightning scheme, pixel size and spacial resolution regarding the merging of the low and high resolution data (Faridani et al, in prep.).