$$S = \frac{2k_B T}{\lambda_{obs}^2} \Delta\Omega_{Beam}$$

Jy = 10^{-26} W.m^2.Hz^{-1}

$$S_{cat} = \int S \, dv$$

Jy.km.s^{-1}

$$S = S_{cat} / \Delta v_{rad}$$

$$\Delta\Omega_{Beam} = A \frac{\lambda_{obs}^2}{D_{eff}^2}$$

A ~ 1.7

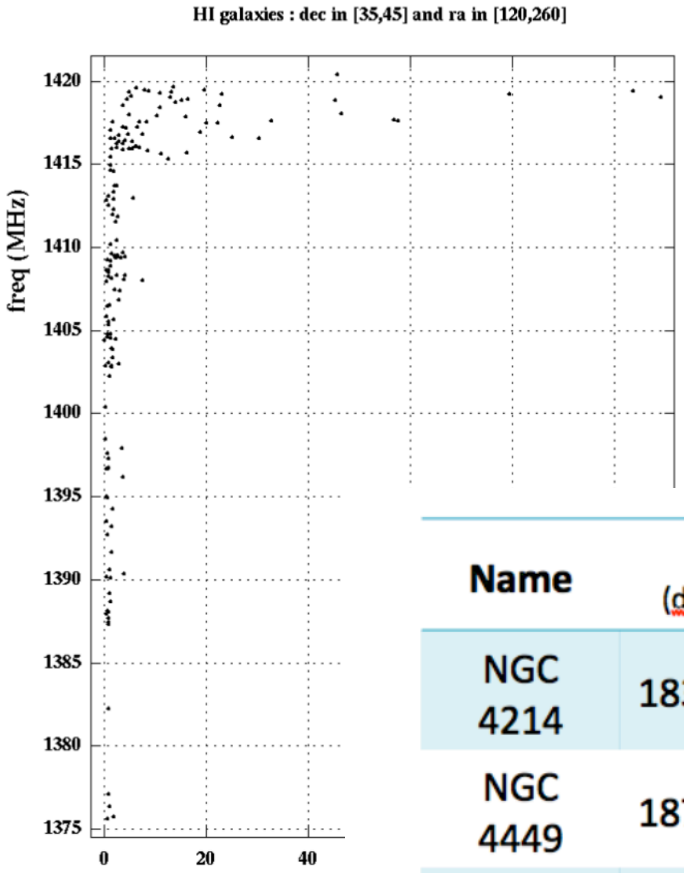
D_{eff} ~ 14m Beam des 4 dishes

$$\Delta\Omega_{Beam} \approx (1/50)^\circ$$

$$T \approx \frac{D_{eff}^2}{2Ak_B} \times \frac{S_{cat}}{\Delta v_{rad}}$$

$$\nu_0 = \nu_{HI} \sqrt{\frac{1-\beta}{1+\beta}}$$

$$\beta = \frac{v^{rad}}{c}$$

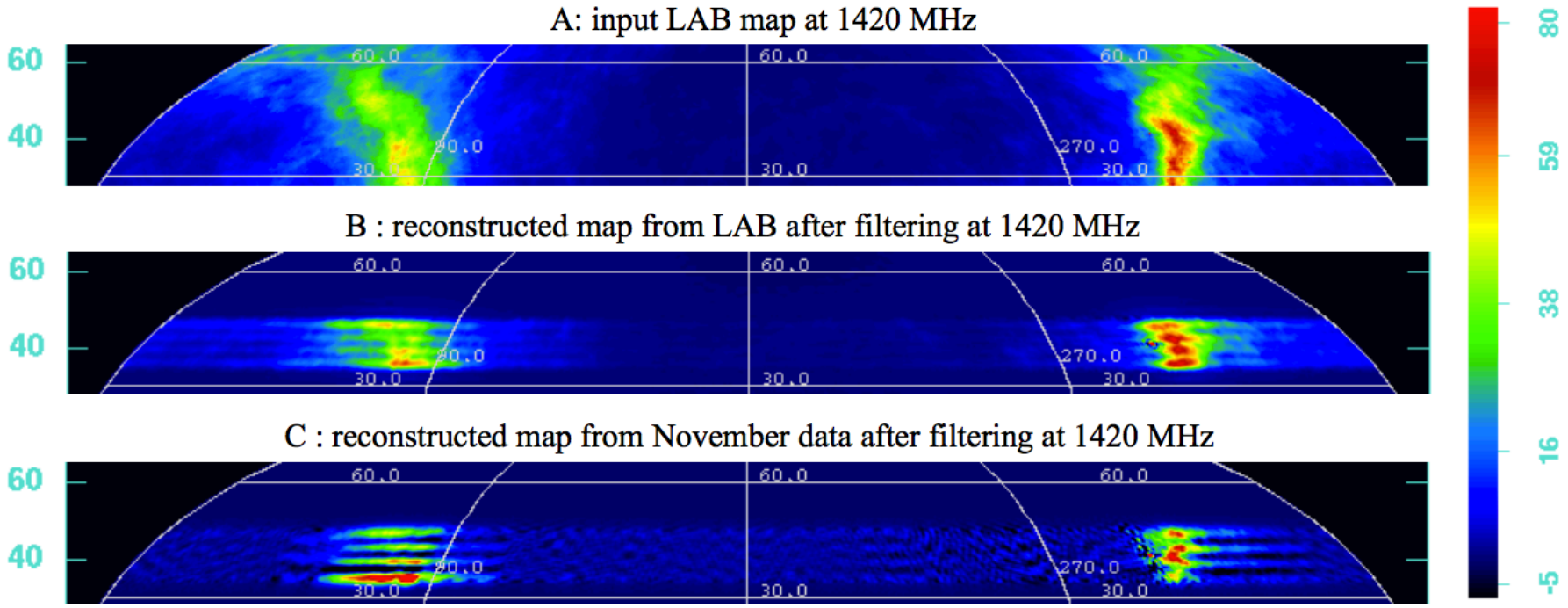


Valentin Beyler (juil. 2017)

A General Catalog of HI Observations of Galaxies. Huchtmeier W.K., Richter O.-G, Bohnenstengel H.D., Hauschild M. 1989. ISBN # 3 − 540 − 96997 − 7; 0 − 387696997 − 7

Name	α (degree)	δ (degree)	ν_0 (MHz)	$\Delta\nu$ (MHz)	T_2 (mk)
NGC 4214	183.9144	+36.3275	1419.01	0.445	109.1
NGC 4449	187.0472	+44.0944	1419.42	0.668	103.7
NGC 4244	184.3749	+37.8074	1419.22	1.058	79.5
NGC 4490	187.6526	+41.6395	1417.62	1.154	57.7

FIGURE 6: Tableau des 4 plus chaudes galaxies


A: input LAB map at 1420 MHz
B : reconstructed map from LAB after filtering at 1420 MHz
C : reconstructed map from November data after filtering at 1420 MHz
60
40
60.0
30.0
270.0
80
59
38
16
-5