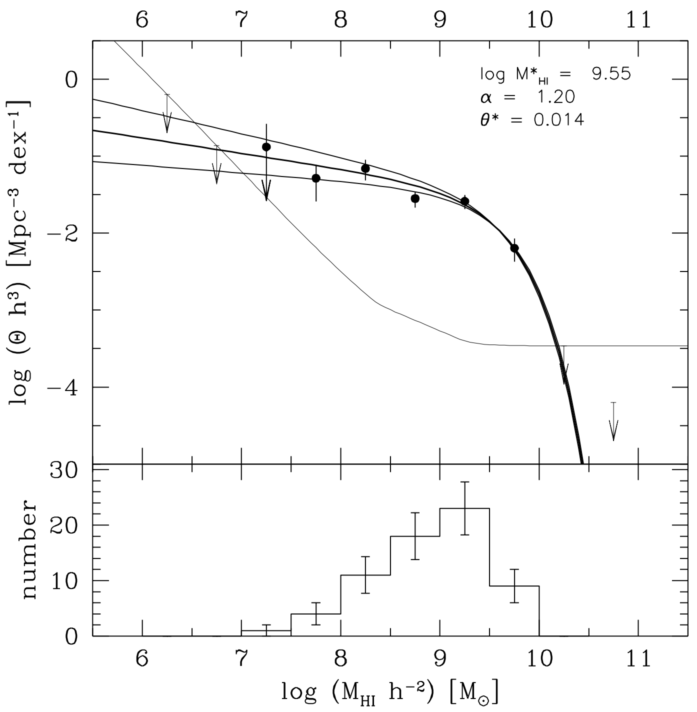

Fig. 5.— Lower panel: The distribution of H I masses of the detected galaxies from VLA follow-up measurements. The errorbars are given by Poisson statistics. Upper panel: The thin line is the sensitivity of the survey defined by $\phi = 1/\mathcal{V}$, where $\mathcal{V}$ is the effective search volume. In the region $10^7\mathrm{M}_\odot < M_{\mathrm{HI}} < 10^{10}\mathrm{M}_\odot$ this function defines an upper limit to the space density of intergalactic H I clouds without stars. The measured H I mass function per decade is shown by the points. The fat line is a Schechter luminosity function with parameters as given in the upper right corner. Also Schechter functions with $\alpha = 1.1$ and $\alpha = 1.3$ are shown. The arrows show upper limits to the space density of H I rich galaxies or intergalactic H I clouds. The two arrows on the right are from a complementary survey with the Arecibo telescope over the range 19,000 to 28,000 km s^{-1}.

In the range $10^7\mathrm{M}_\odot < M_{\mathrm{HI}} < 10^{10}\mathrm{M}_\odot$ this function defines an upper limit to the space density of intergalactic H I clouds without stars. It also shows that this survey is not capable of measuring the HIMF directly in the regions $M_{\mathrm{HI}} < 10^7\mathrm{M}_\odot$ and $M_{\mathrm{HI}} > 10^{10}\mathrm{M}_\odot$ if the extrapolation of the analytical form for $\Theta(M_{\mathrm{HI}})$ holds. The sensitivity function does allow us to define upper limits in these ranges as indicated by arrows. The upper limit at $M_{\mathrm{HI}} = 10^{10.75}\mathrm{M}_\odot$ is from the complementary survey with the Arecibo telescope over the range 19,000 to 28,000 km s^{-1}, only sensitive to high mass galaxies (See Sorar (1994) for details).