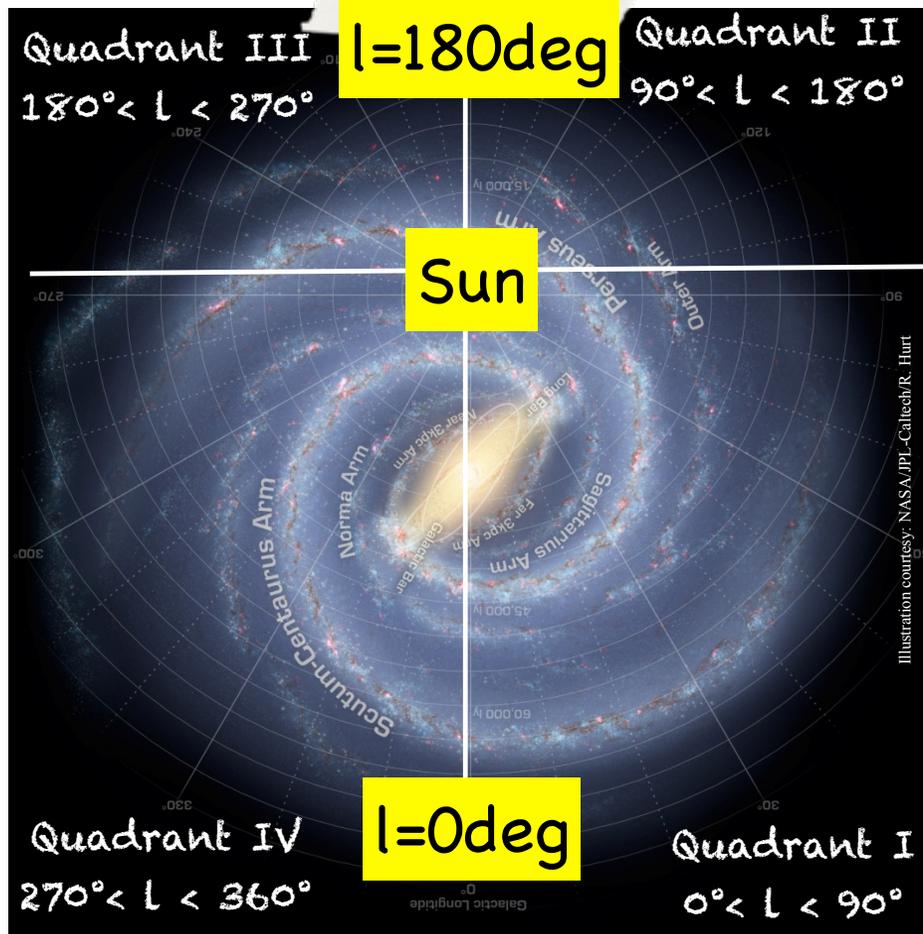
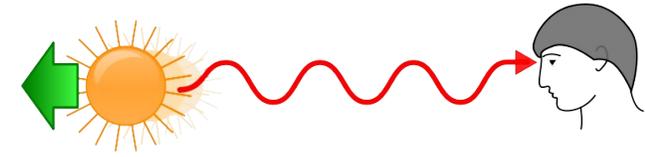


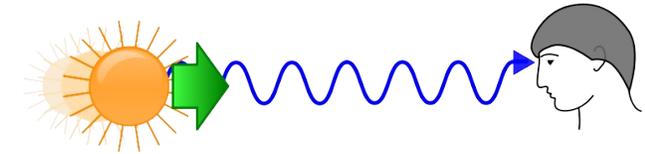
# Cálculo Curva de Rotación de la Galaxia



Si la fuente se aleja de nosotros:  
**DESPLAZAMIENTO AL ROJO (REDSHIFT)**



$l=90\text{deg}$

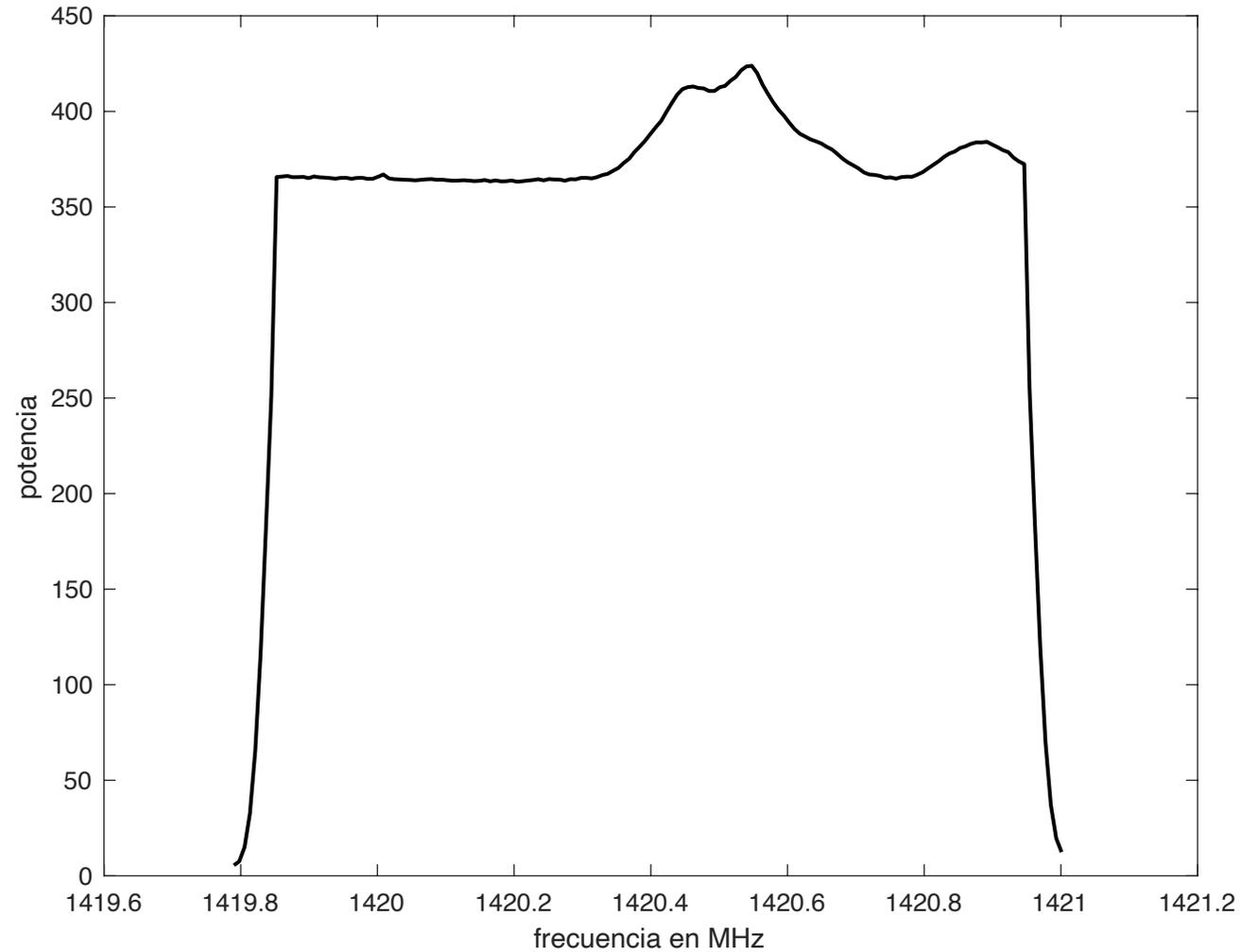


Si la fuente se acerca hacia nosotros:  
**DESPLAZAMIENTO AL AZUL (BLUESHIFT)**

Quadrant I:	$0^\circ < l < 90^\circ$	$v_r > 0$ (redshifted)
Quadrant II:	$90^\circ < l < 180^\circ$	$v_r < 0$ (blueshifted)
Quadrant III:	$180^\circ < l < 270^\circ$	$v_r > 0$ (redshifted)
Quadrant IV:	$270^\circ < l < 360^\circ$	$v_r < 0$ (blueshifted)

# Espectro de la Fuente (Potencia (K) vs frecuencia (Mhz))

SRT\_PropNNN\_Obs1\_Exp1\_asc.rad\_quicklook\_spectrum.csv



# Espectro de la Fuente (Potencia (K) vs velocidad (km/s))

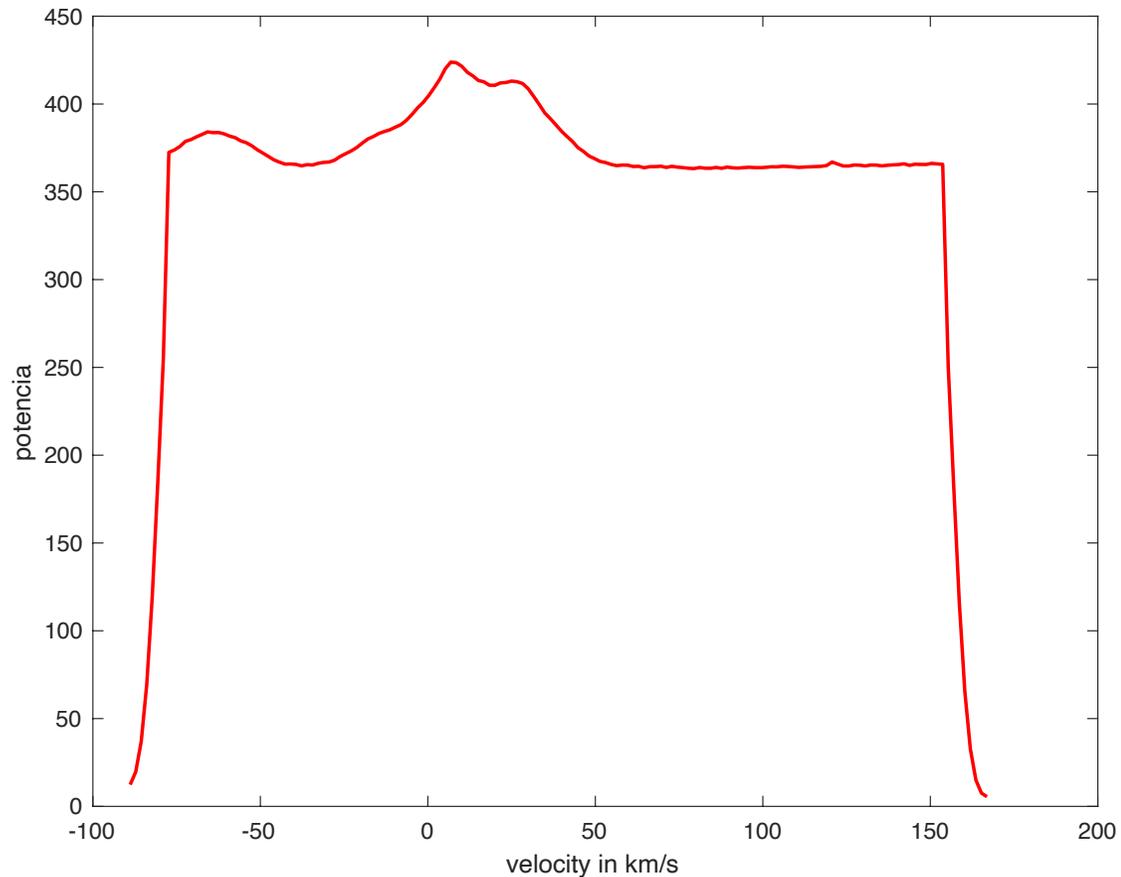
Paso de  
frecuencias a  
velocidades  
(Doppler)

$$V = \frac{f_0 - f}{f_0} c - VLSR$$

$$f_0 = 1420.405 \text{ Mhz}$$

$$c = 3 \times 10^5 \text{ km/s}$$

*VLSR* Velocity with respect to the Local Standard of Rest (LSR)



Depende de cada observación



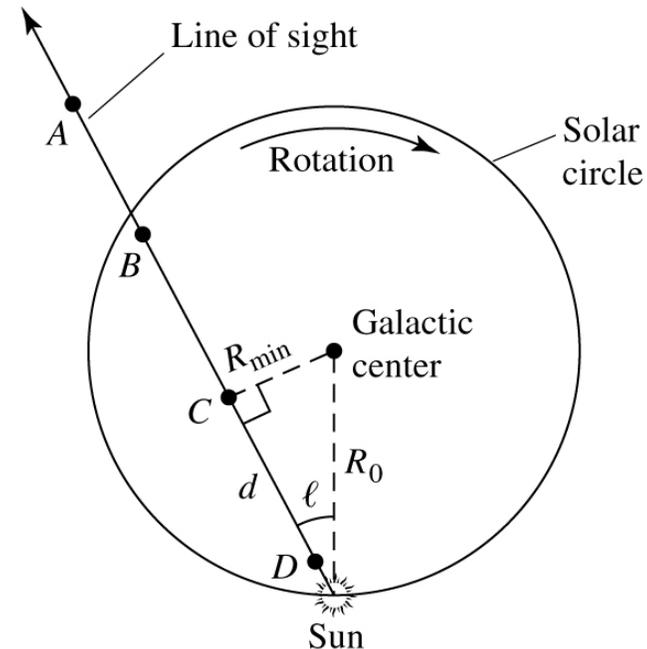
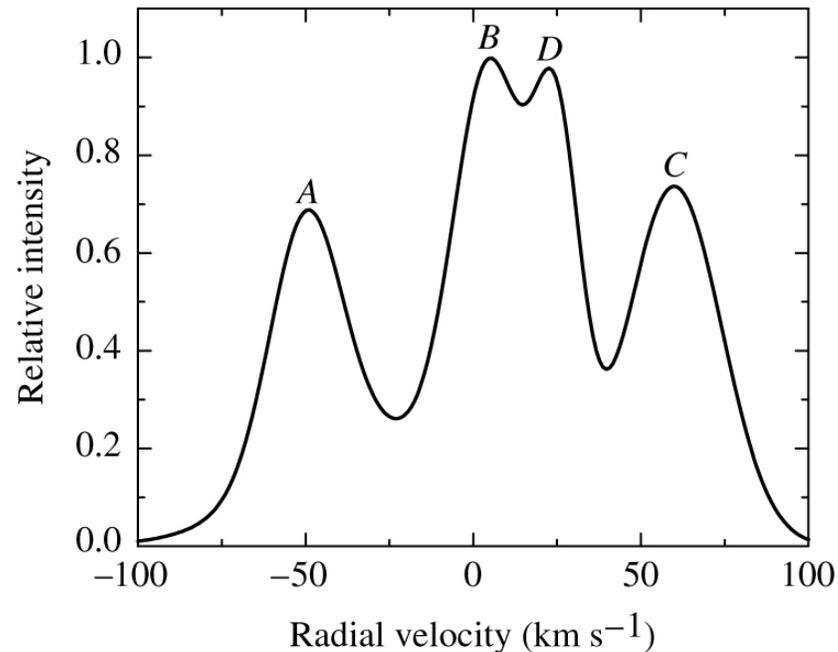
DATOS

SRT\_Prop316\_Obs1\_Exp1\_asc.rad

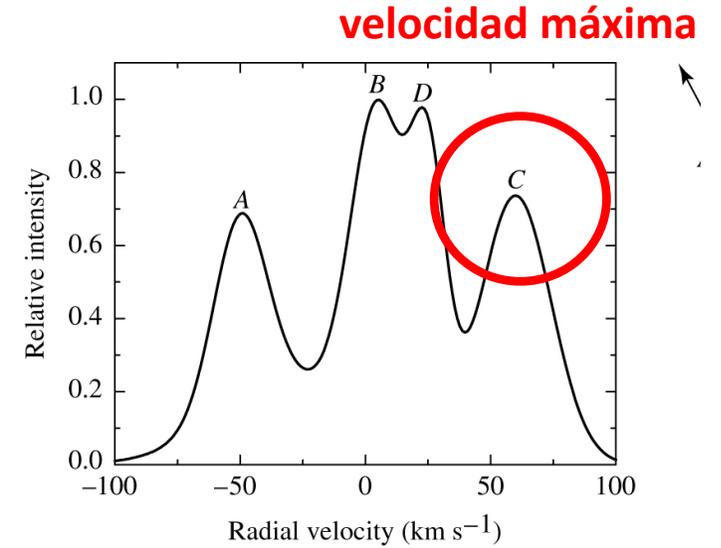
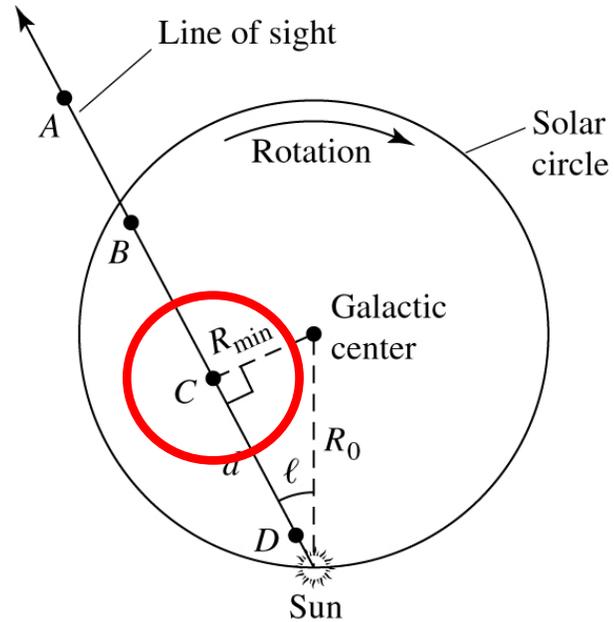
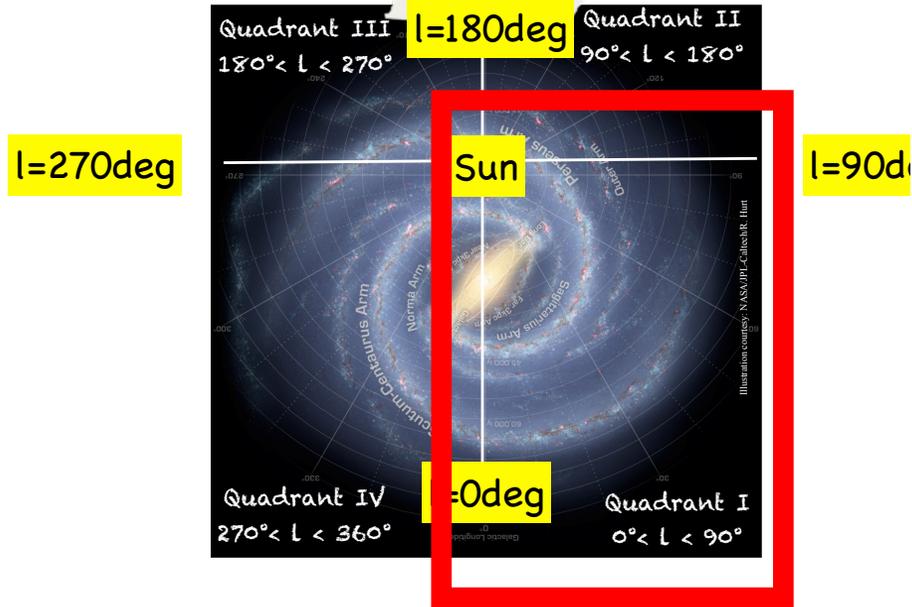
# Cálculo Curva de Rotación de la Galaxia (V vs R)

$$v_r = V \frac{R_0}{R} \sin(l) - V_0 \sin(l)$$

- $V_0$  Sun's velocity around the Galactic center (= 220 km/s)
- $R_0$  Distance of the Sun to the Galactic center (= 8.5 kpc; 1 pc =  $3.09 \times 10^{16}$  m)
- $l$  Galactic longitude
- $V$  Velocity of a cloud of gas
- $R$  Cloud's distance to the Galactic center, or Galactocentric radius



# Cálculo para Ángulos en el Primer Cuadrante



Para la velocidad máxima se cumple que

$$R_{\min} = R_0 \sin(l)$$

$$V = v_r + V_0 \sin(l)$$

# Simulador de Observaciones

<http://euhou.obspm.fr/public/simu.php>

DESACTIVA LA FUNCIÓN  
VISIBILITY  
PARA REALIZAR LAS  
SIMULACIONES!!

