

Solar motion: sun moving “upwards” at 7 km/s wrt other stars

*Older stars show a greater dispersion in observed velocity*

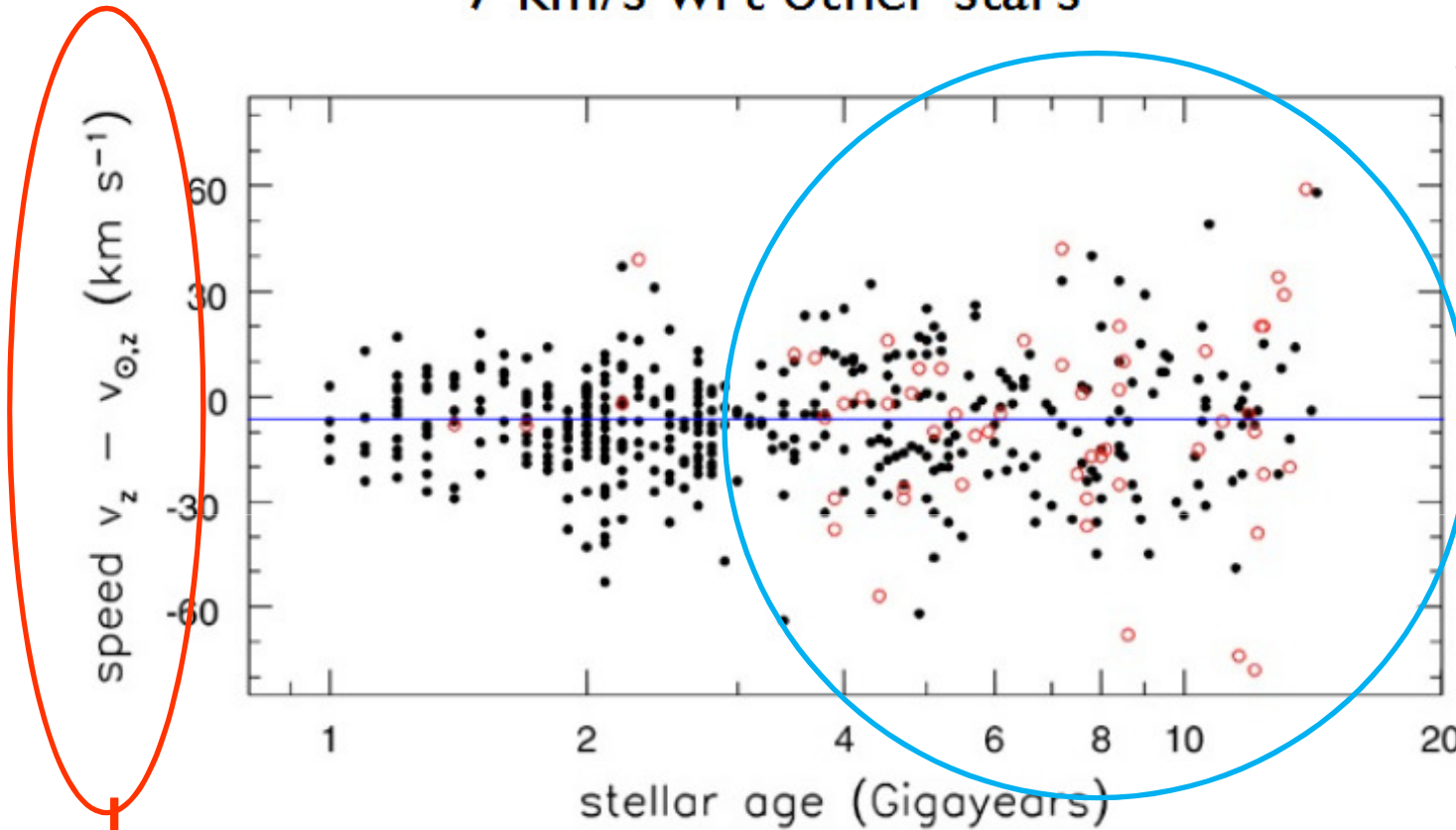
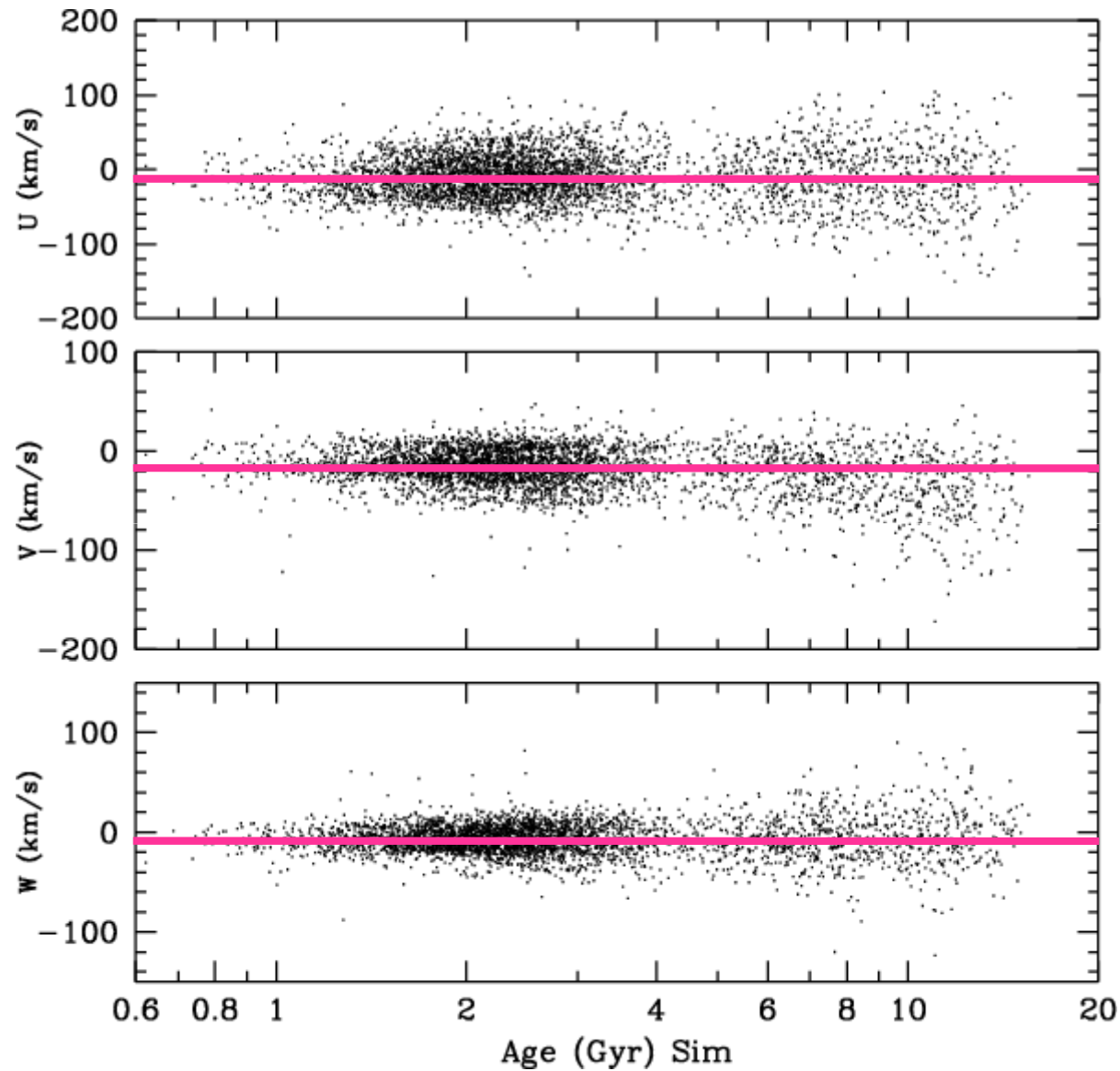


Fig 2.9 'Galaxies in the Universe' Sparke/Gallagher

The quantity measured and plotted along Y-axis is  $\Delta w$ , which is the observed velocity of each of those stars with respect to the Sun in the direction perpendicular to the disc of the Galaxy (z-direction)

## Dispersion of velocities with respect to LSR



$U$ ,  $V$  and  $W$  velocities vs. age for the more than 4000 stars from the Geneva-Copenhagen Survey.

*For young stars dispersion is small. For older stars dispersion is larger. (Consistent with the old thick disk and young thin disk).*

*Oldest stars have highest peculiar velocities.*