



Figure R2: Galactic shear stretches the Wave but perseveres the sinusoidal shape of the Wave.

As it is not explained in MA24 that Galactic shear is only capable of stretching the Wave and not of destroying it, we will explain it in this figure. **Left panels:** We show the evolution of the Radcliffe Wave's best fit calculated in K24 at snapshots 0, 15, 30, and 45 Myr in a top-down Galactic view. The LSR frame is shown in yellow. The gray circle indicates the evolution of the LSR frame. **Middle panels:** We transform the left panels into a local zoom-in, co-rotating reference frame (the same frame used in MA24), where the Galactic Center is on the right, indicated by a black arrow. The evolution of the Wave without any additional drift is shown in gray. The evolution of the Wave with an additional radial drift of 5 km s^{-1} is shown in black. We see that the Wave is stretched by a factor of 1.3 after 30 Myr and by a factor of 1.5 after 45 Myr due to Galactic shear/differential rotation. **Right panels:** Side view of the Radcliffe Wave to visualize the effect of Galactic motions on the vertical oscillation. We see that while the Wave is stretched, the nature of the oscillation remains unaffected. Galactic shear preserves the sinusoidal shape of the Wave. In other words, Galactic shear alone does not destroy the Wave's oscillation, nor the radial drift of the structure.