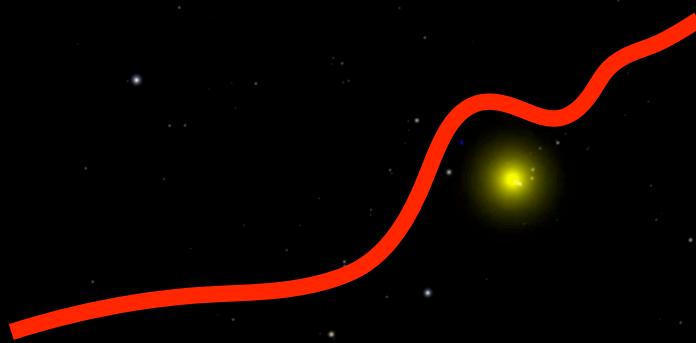
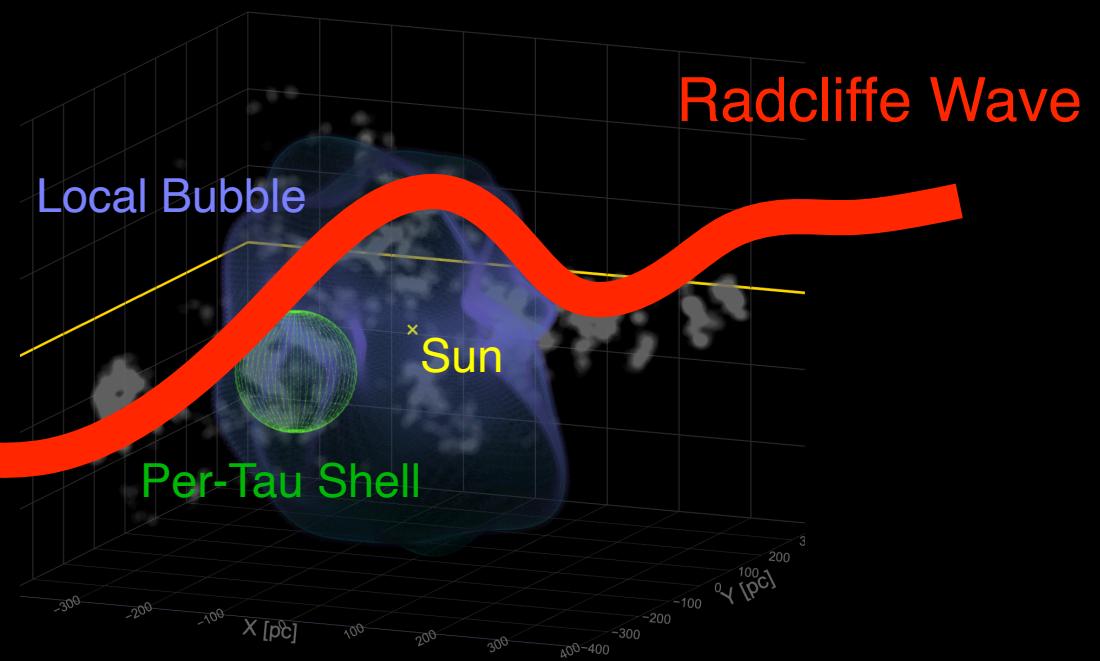
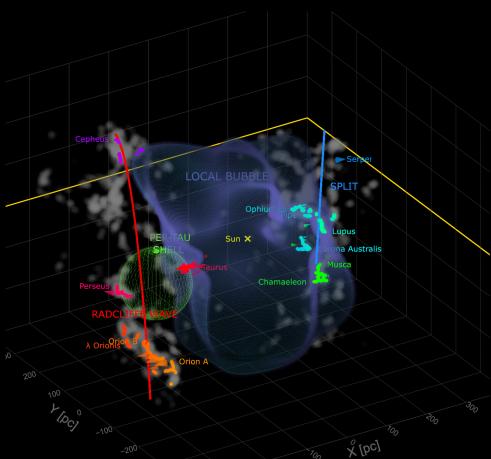


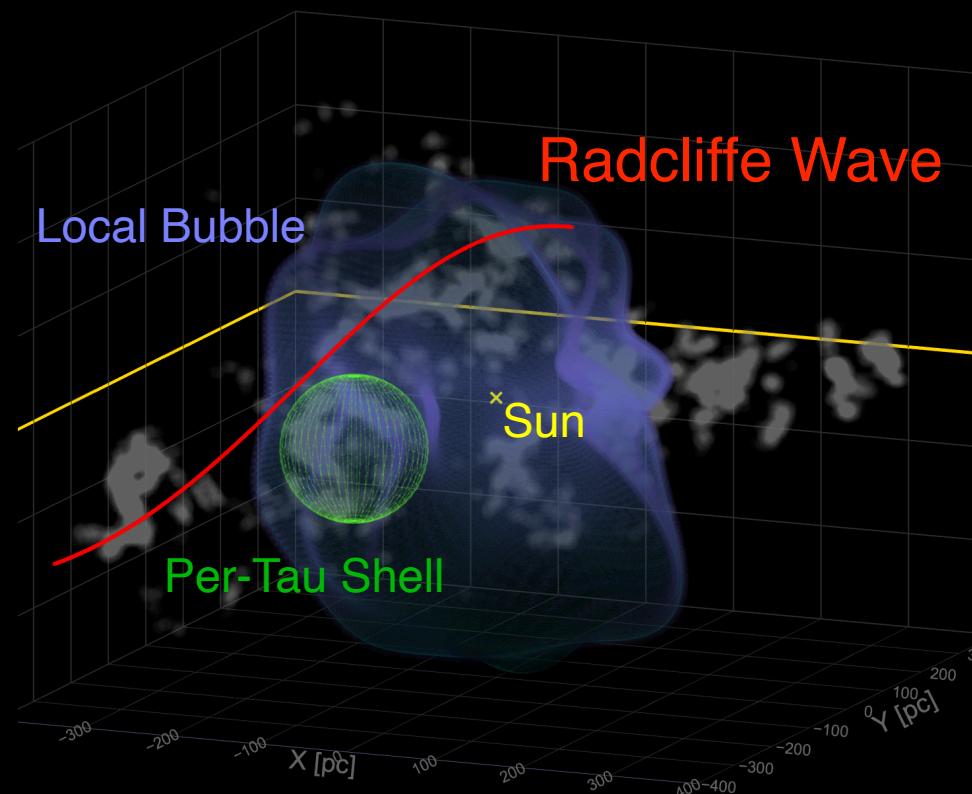
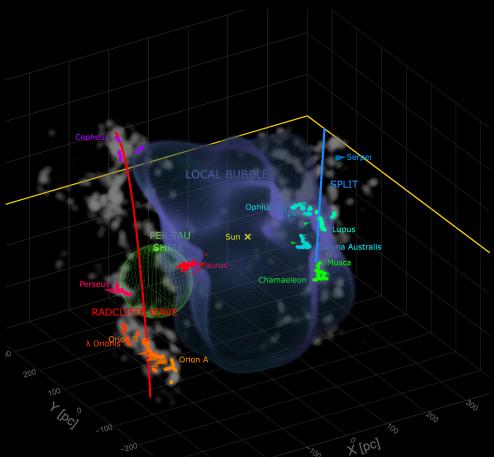
Kinematics of the Radcliffe Wave

Ralf Konietzka



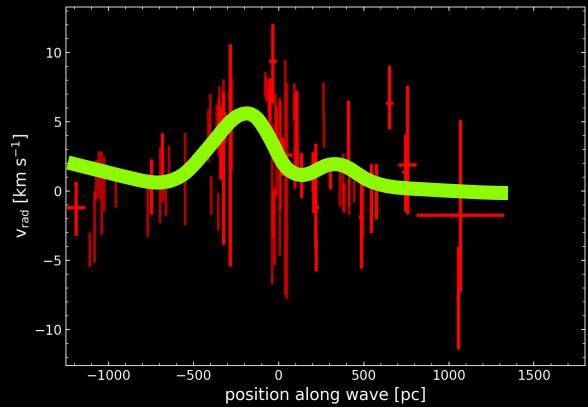


Kinematics of the Radcliffe Wave – Ralf Konietzka

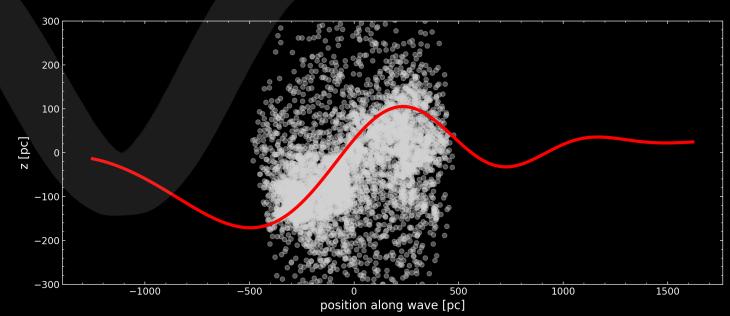


Kinematics of the Radcliffe Wave – Ralf Konietzka

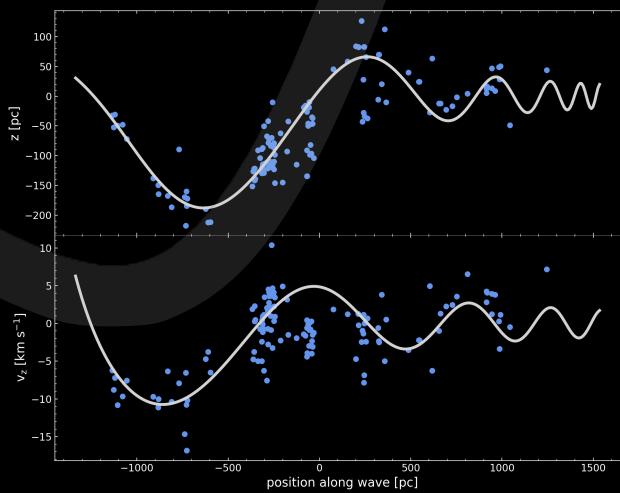
Gas - ^{12}CO



Stars

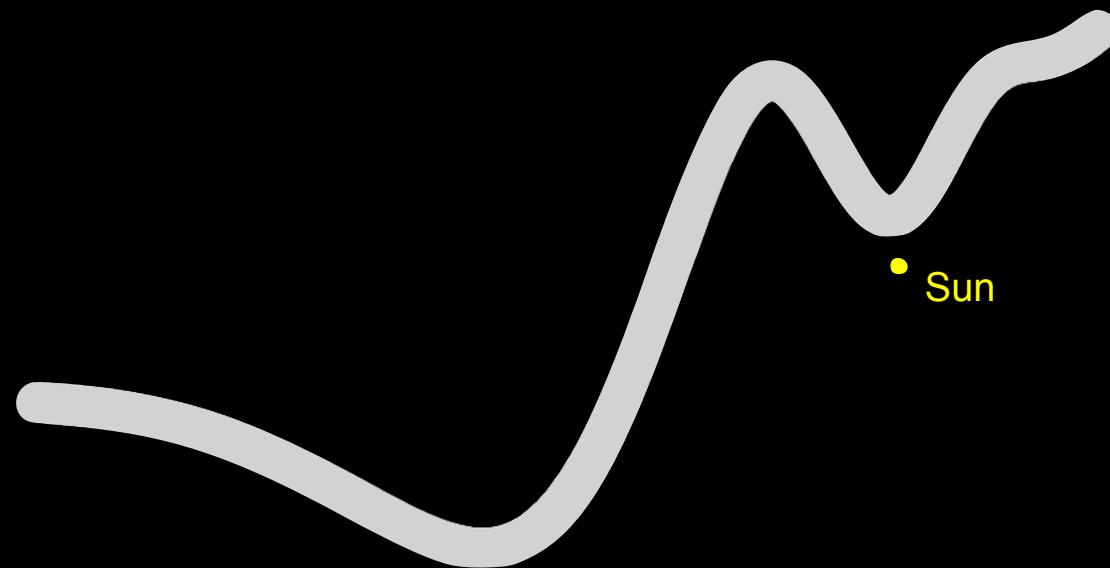


Stellar Cluster



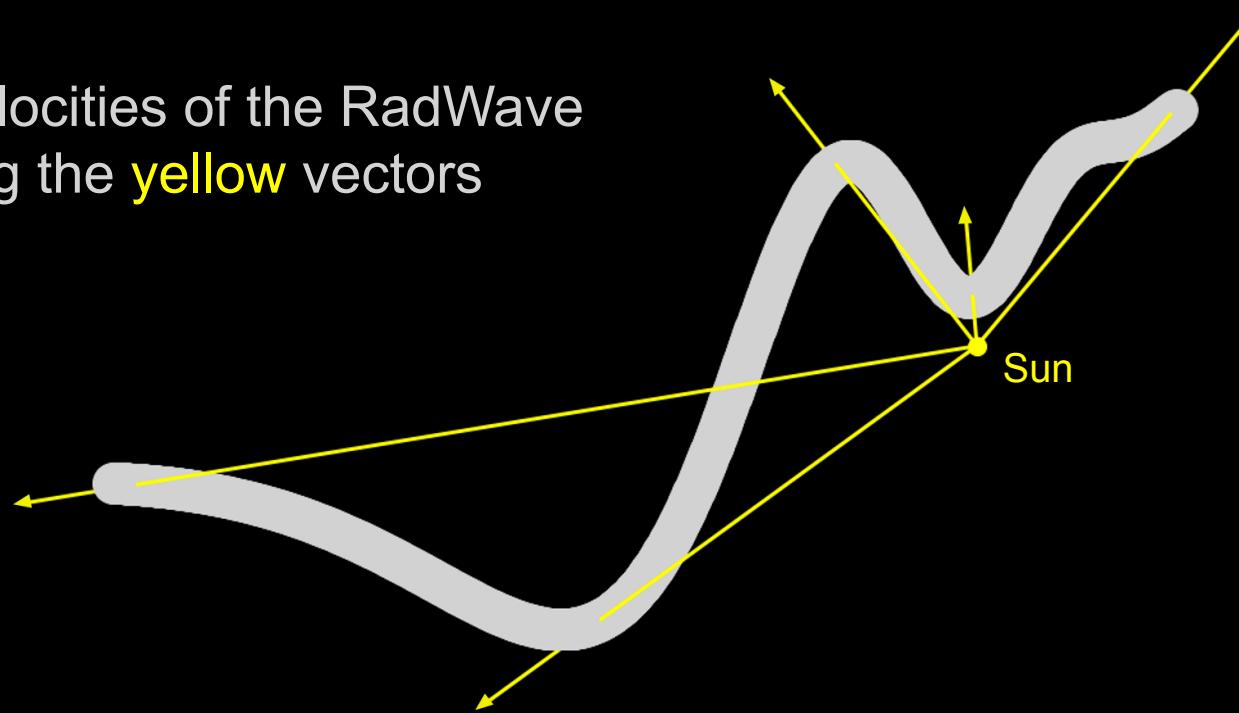
Kinematics of the Radcliffe Wave – Ralf Konietzka

Technique - ^{12}CO

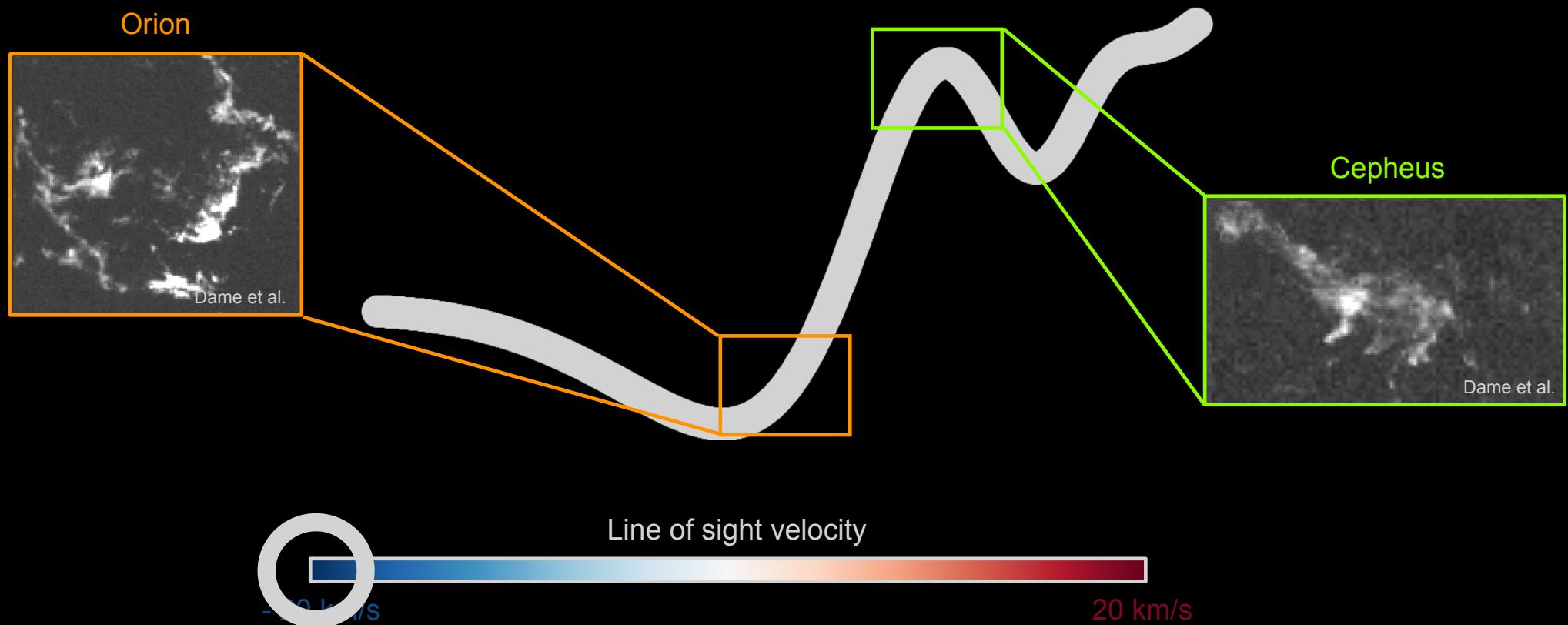


Technique - ^{12}CO

Line of sight velocities of the RadWave
measured along the yellow vectors



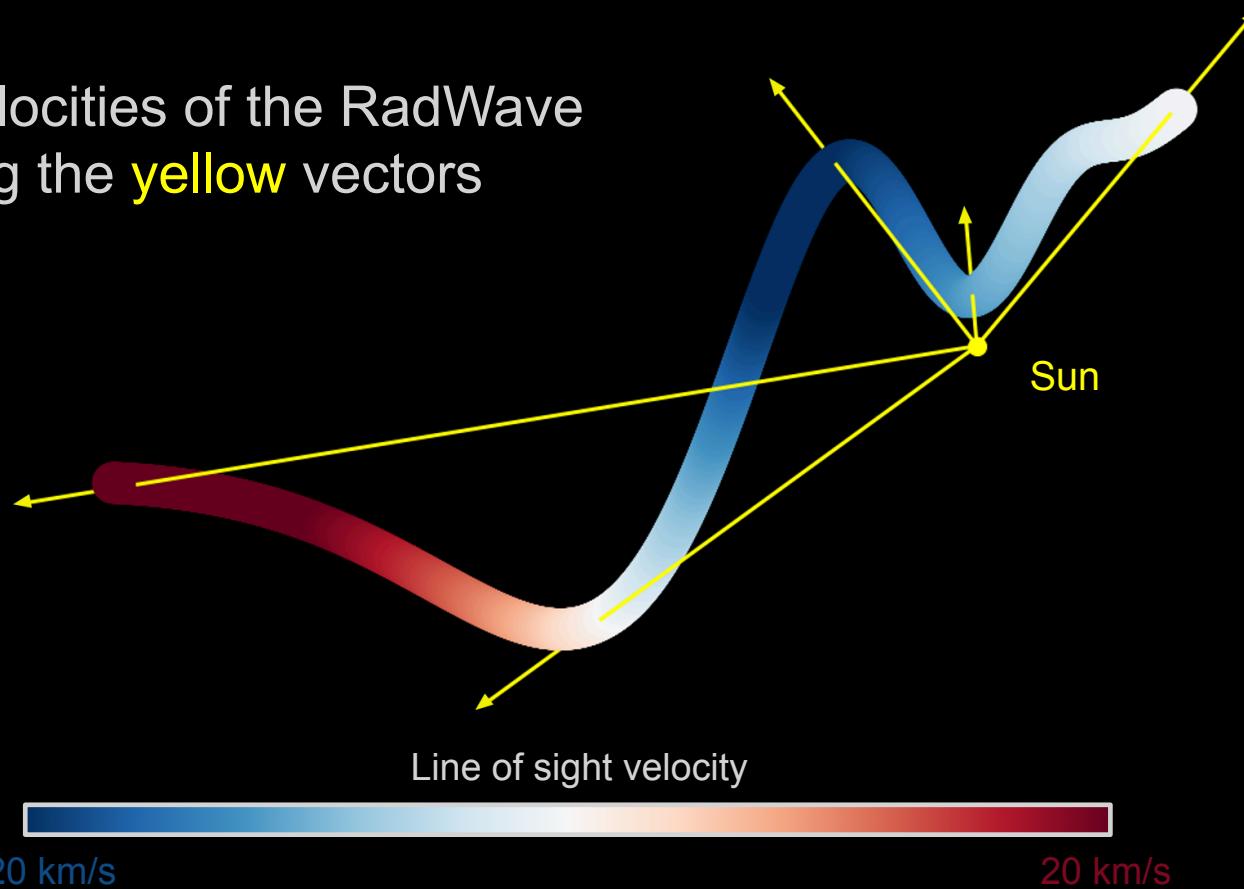
Technique - ^{12}CO



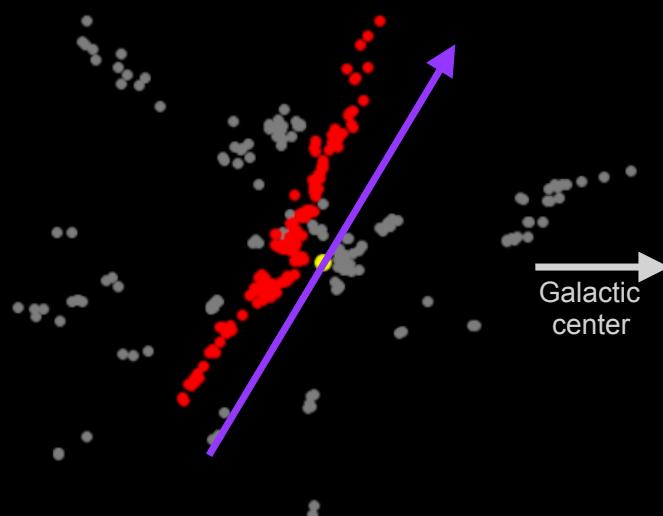
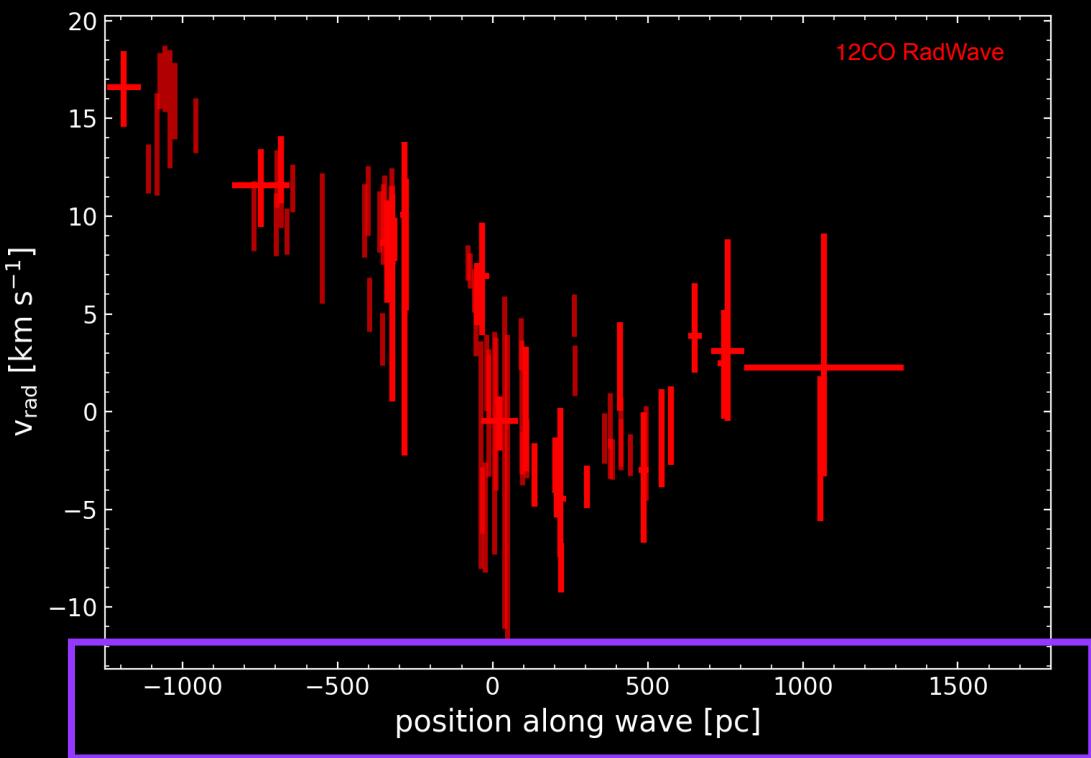
Kinematics of the Radcliffe Wave – Ralf Konietzka

Technique - ^{12}CO

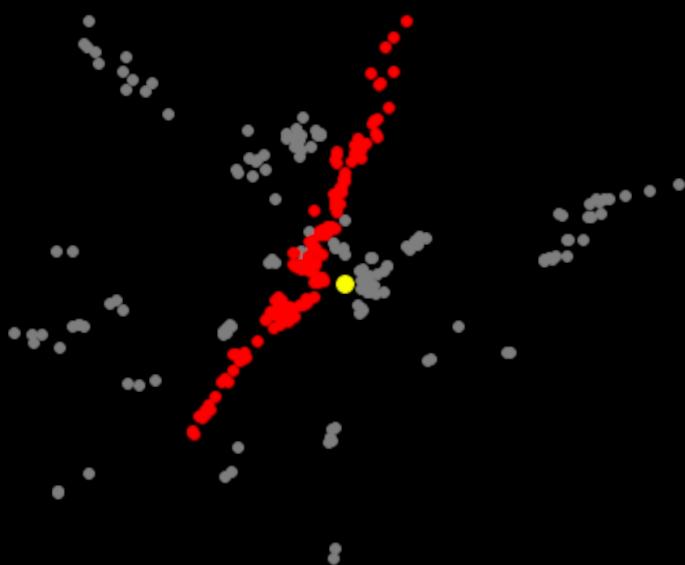
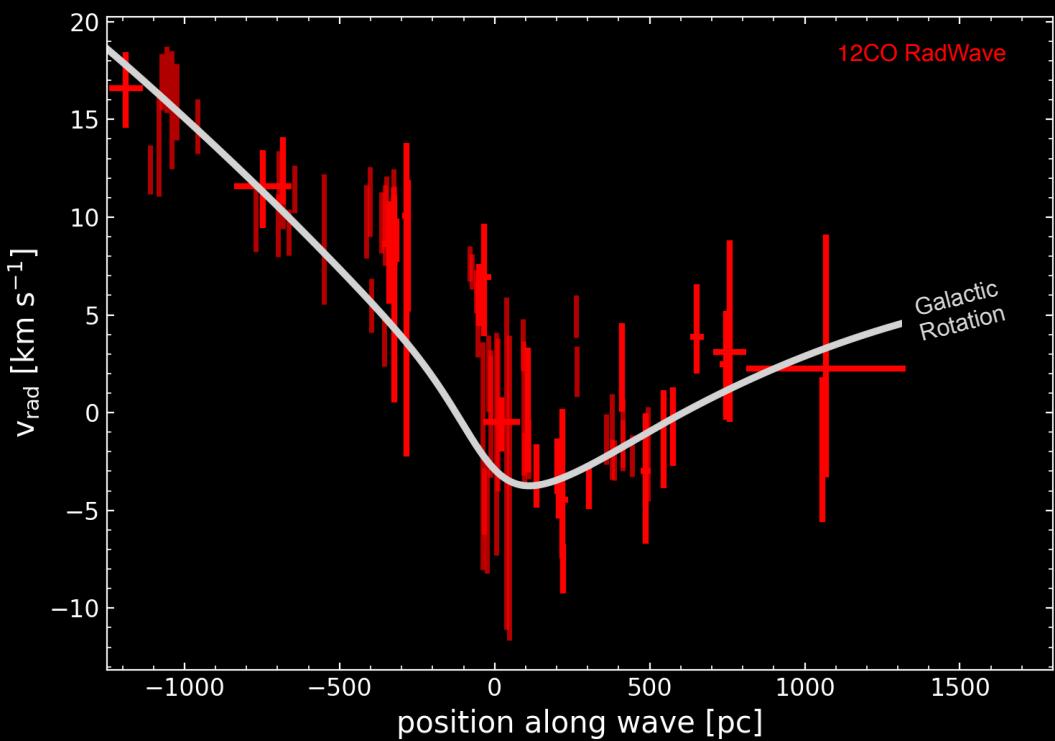
Line of sight velocities of the RadWave measured along the **yellow** vectors



Galactic Rotation

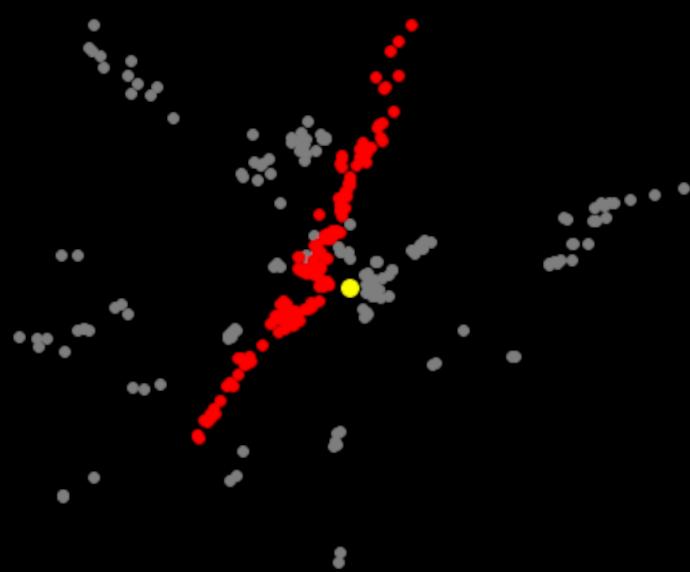
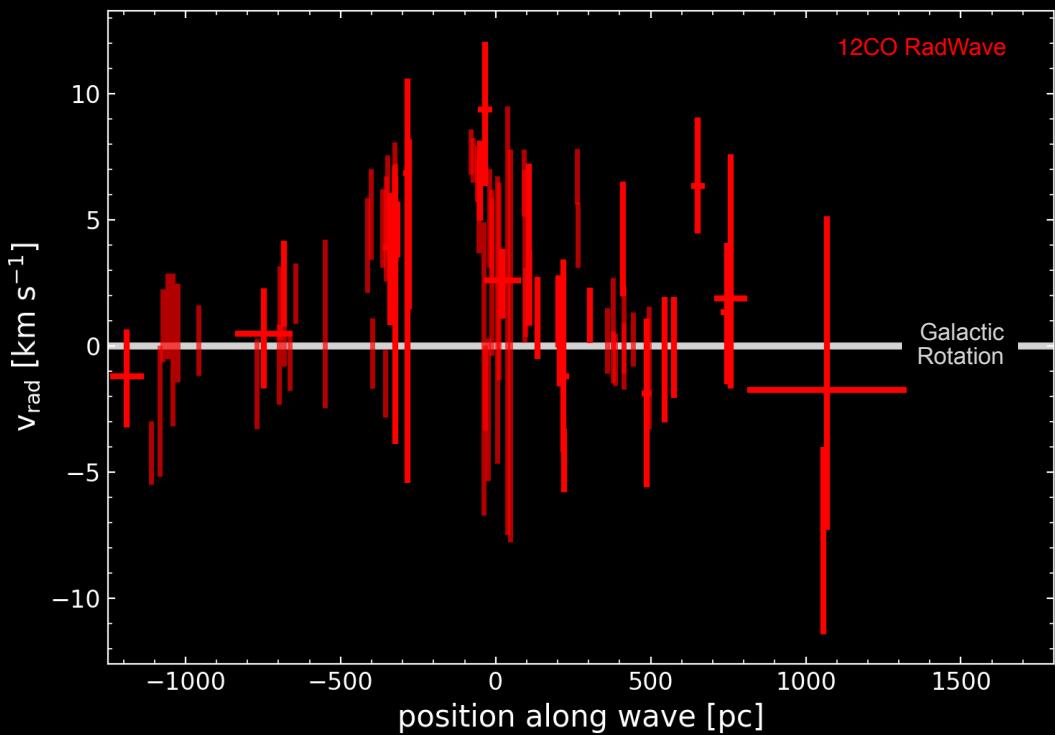


Galactic Rotation

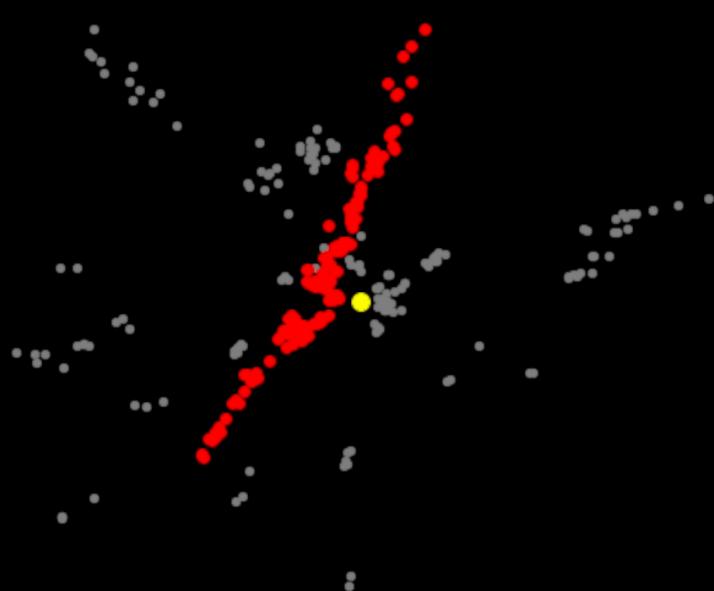
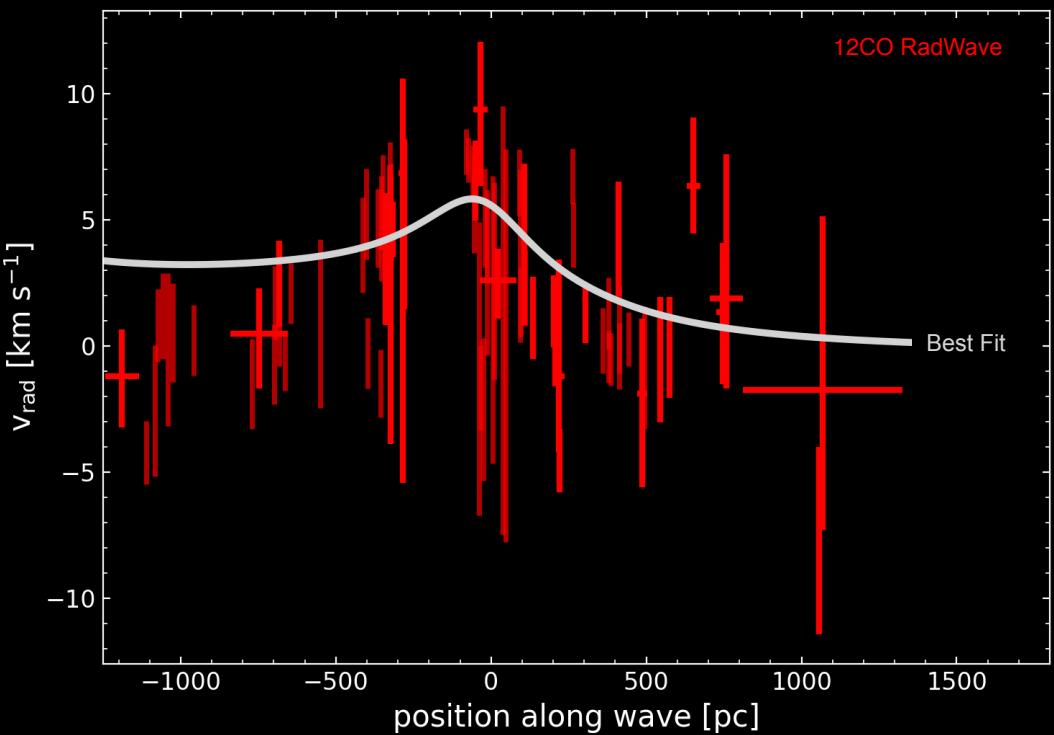


Kinematics of the Radcliffe Wave – Ralf Konietzka

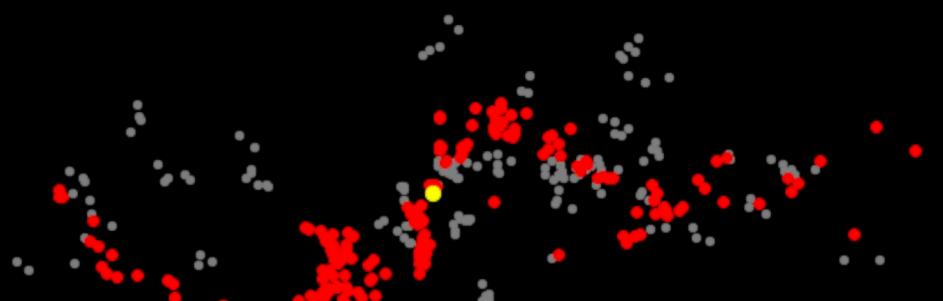
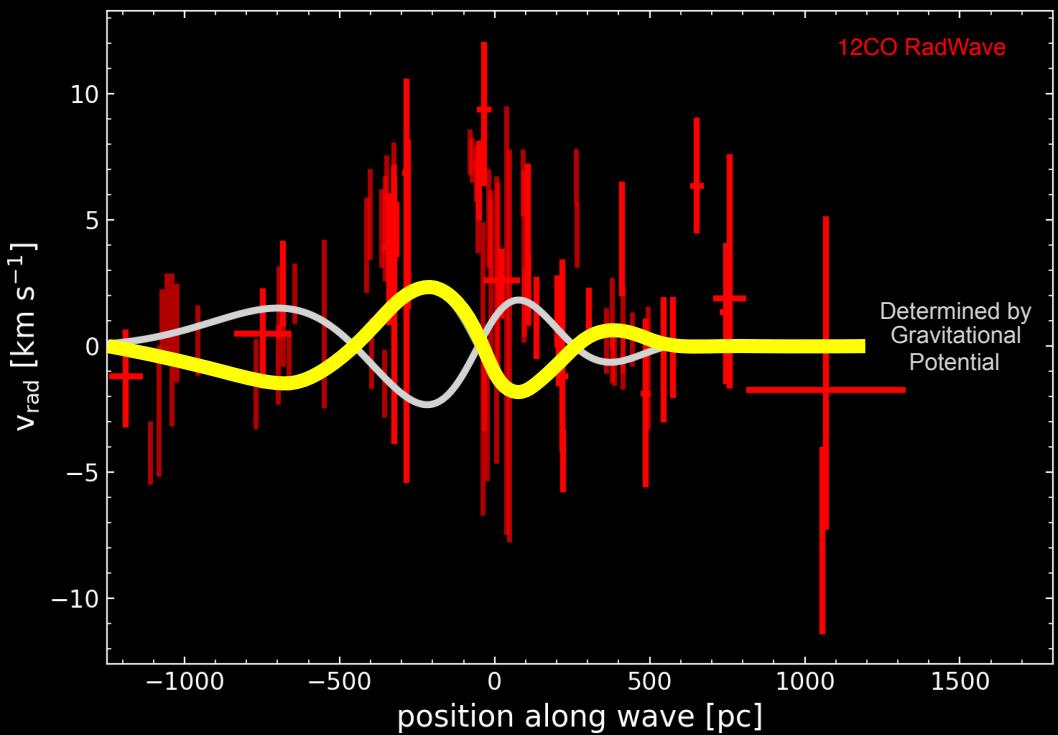
Galactic Rotation – Removed



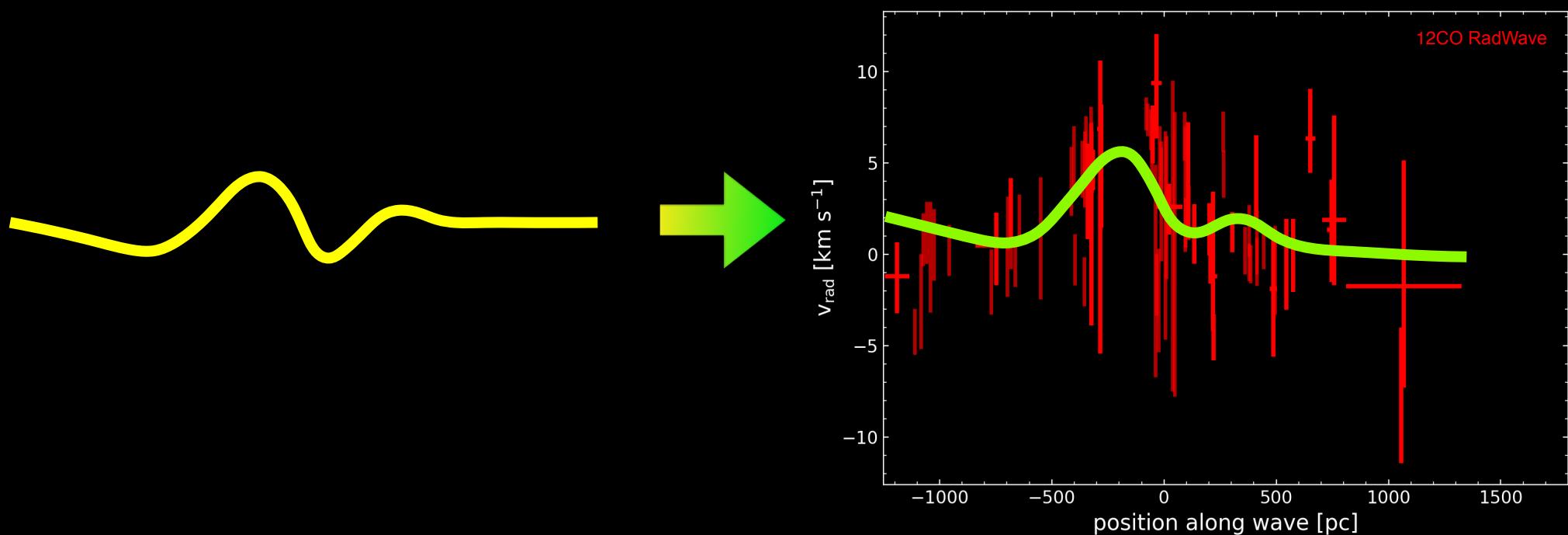
2D Solid Motion (in a co-moving frame)



Gravitational Oscillation (in a co-moving frame)

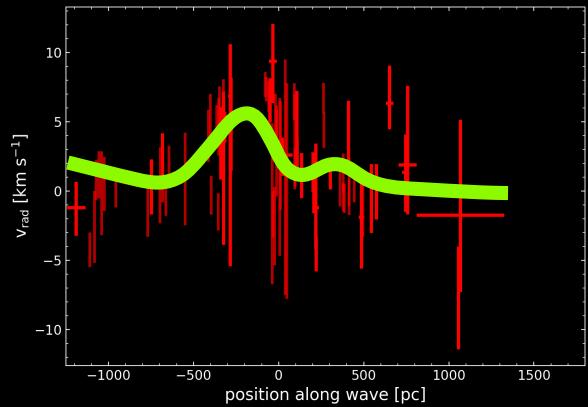


Gravitational Oscillation + 2D Solid Motion

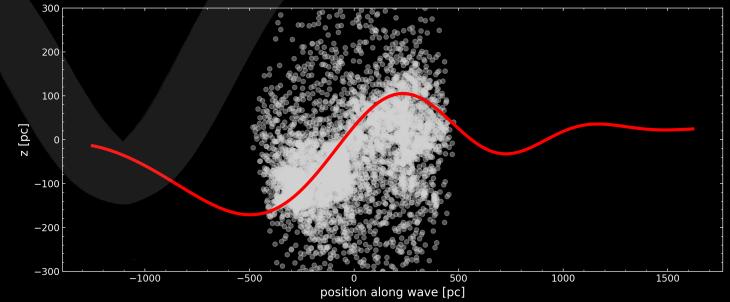


Kinematics of the Radcliffe Wave – Ralf Konietzka

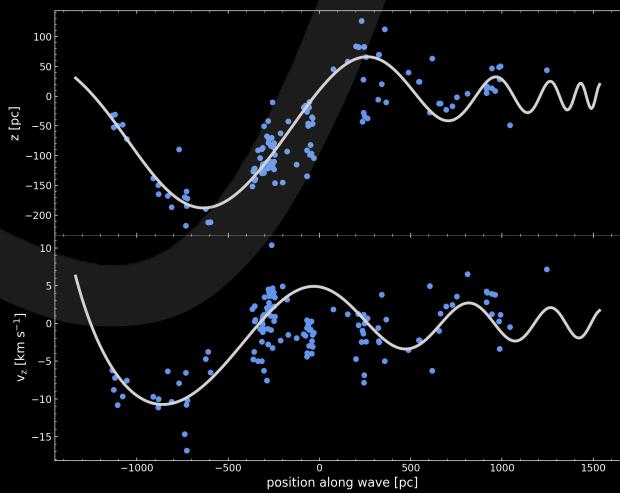
Gas - ^{12}CO



Stars



Stellar Cluster

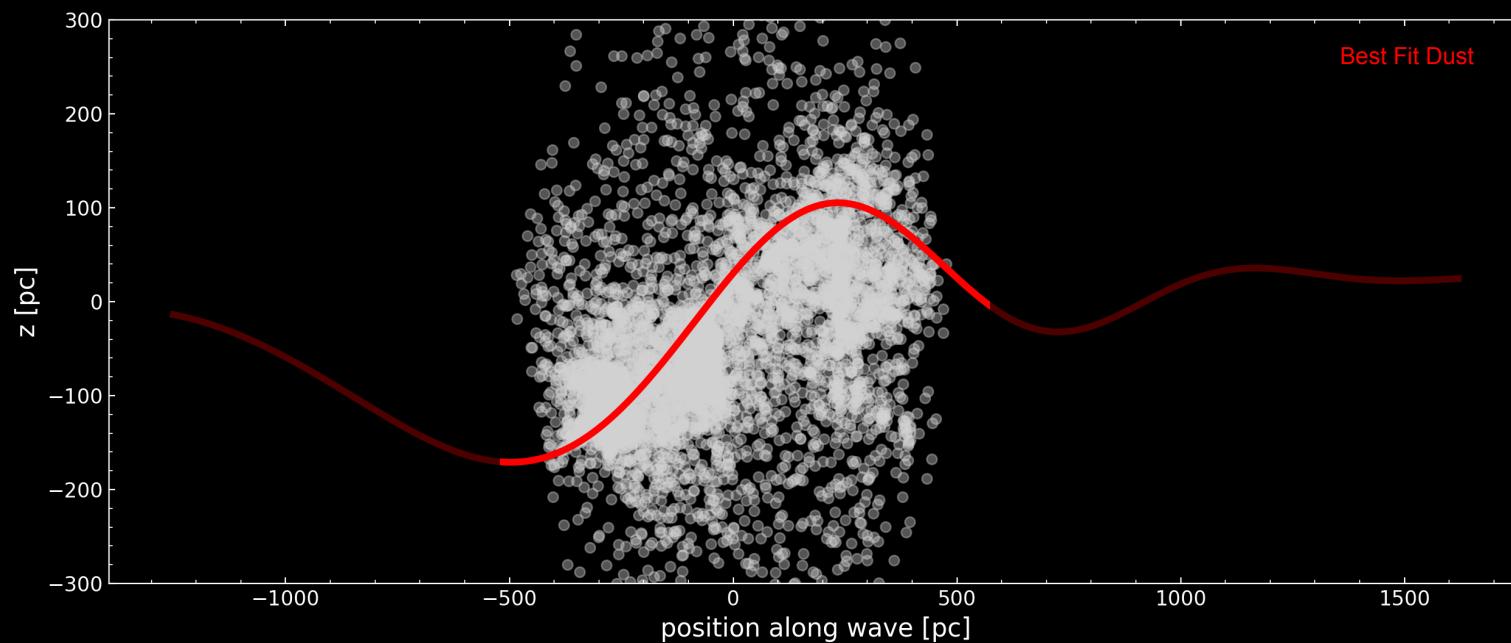


Kinematics of the Radcliffe Wave – Ralf Konietzka

Stars

Zari et al. 2018

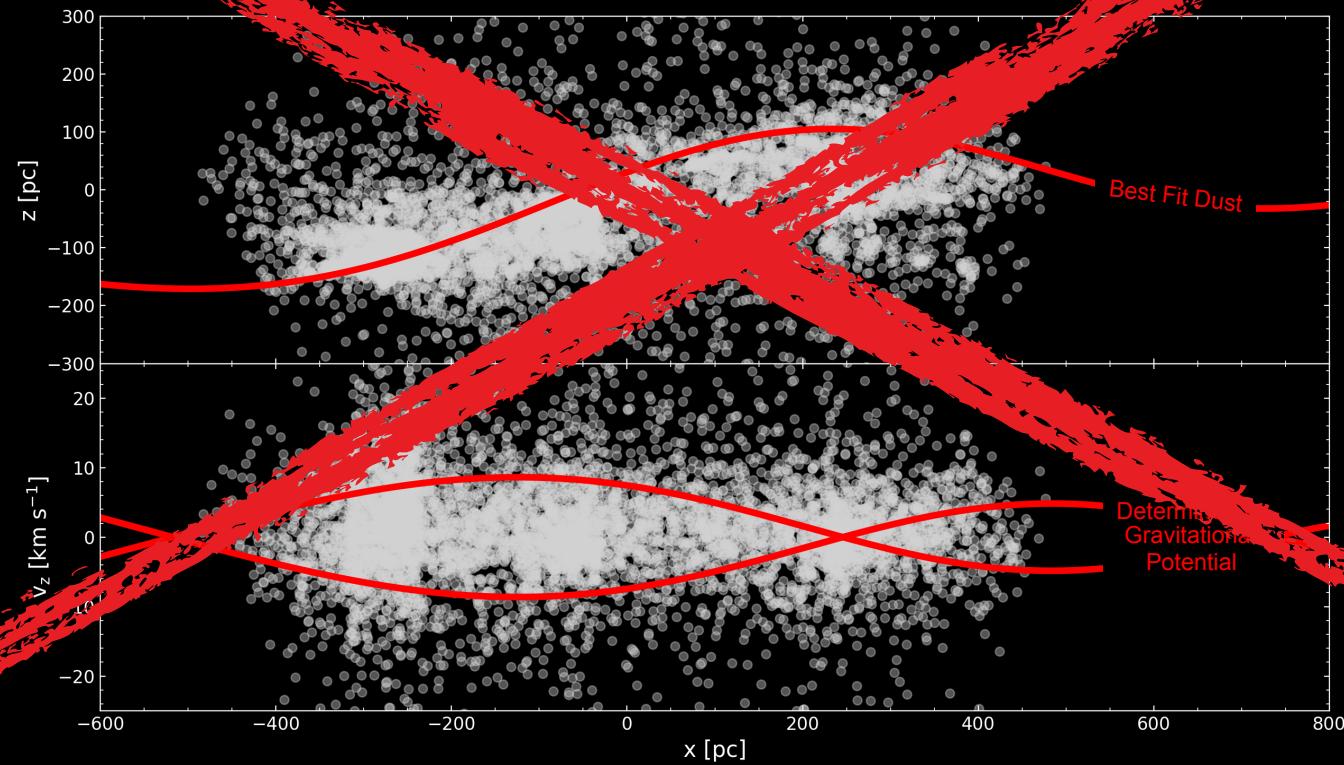
Gaia DR2



Stars

Zari et al. 2018

Gaia DR2

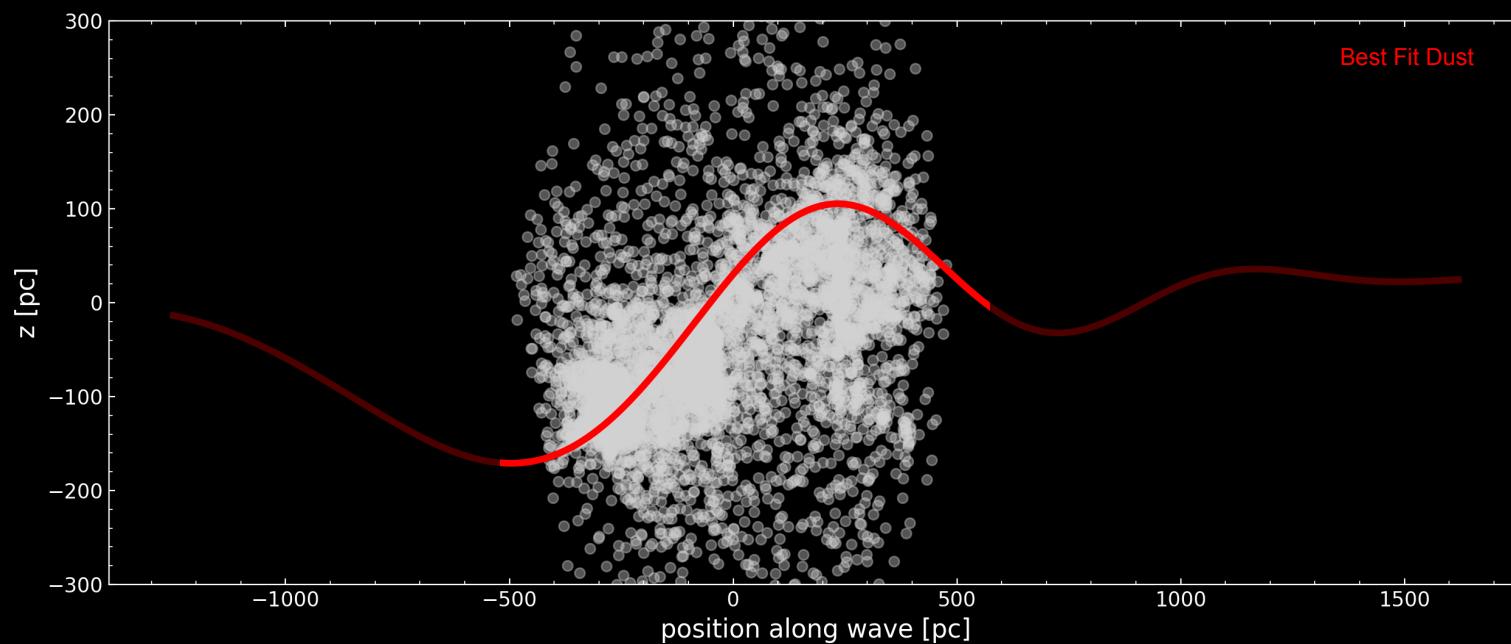


Kinematics of the Radcliffe Wave – Ralf Konietzka

Stars

Zari et al. 2018

Gaia DR2



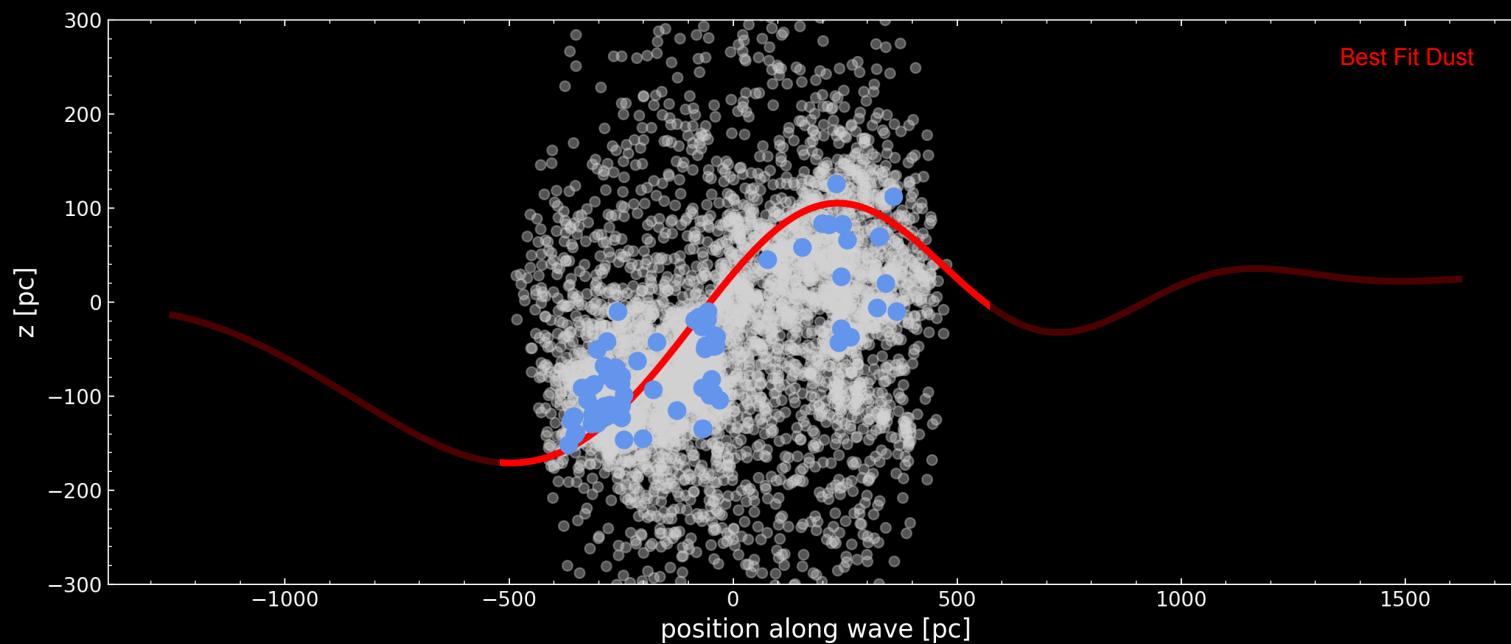
Stellar Cluster

Zari et al. 2018

Gaia DR2

Alves et al. 2022

CantatGaudin et al. 2020 – Sim et al. 2019
Liu et al. 2019 – Szilagyi et al. 2021 – He et al. 2022



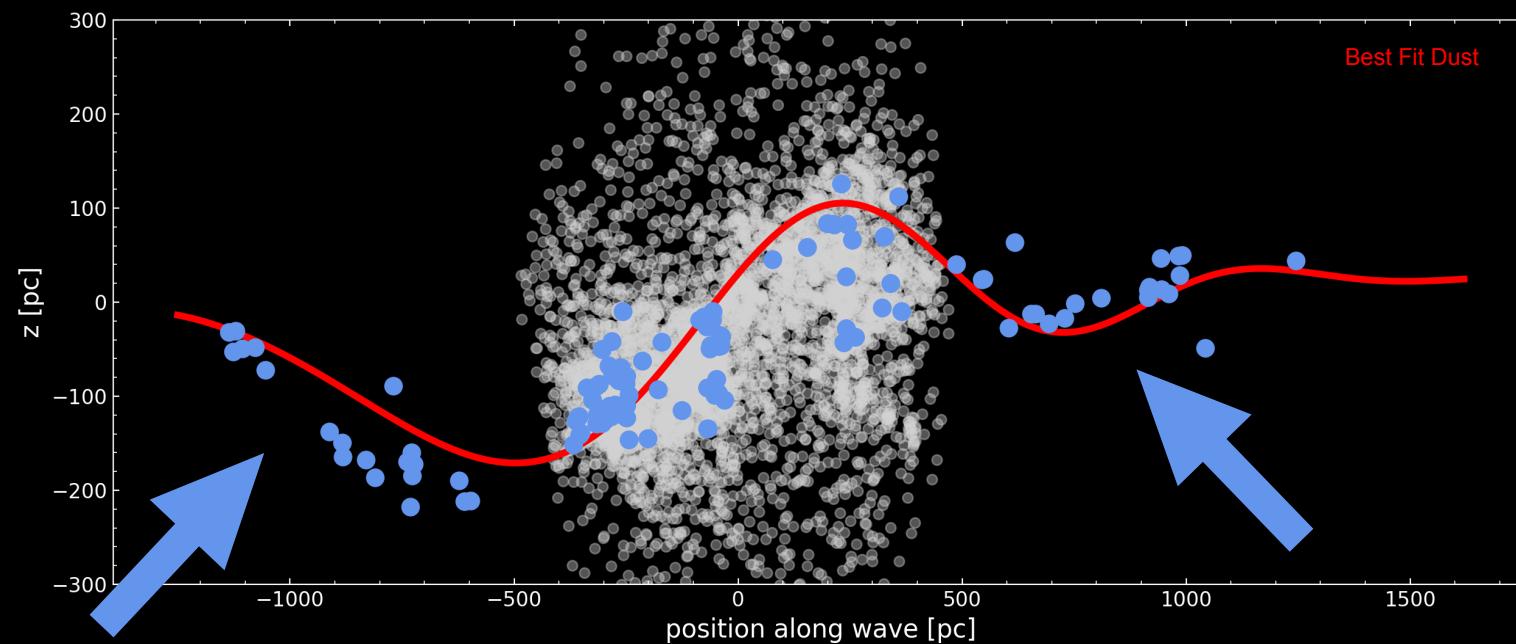
Stellar Cluster

Zari et al. 2018

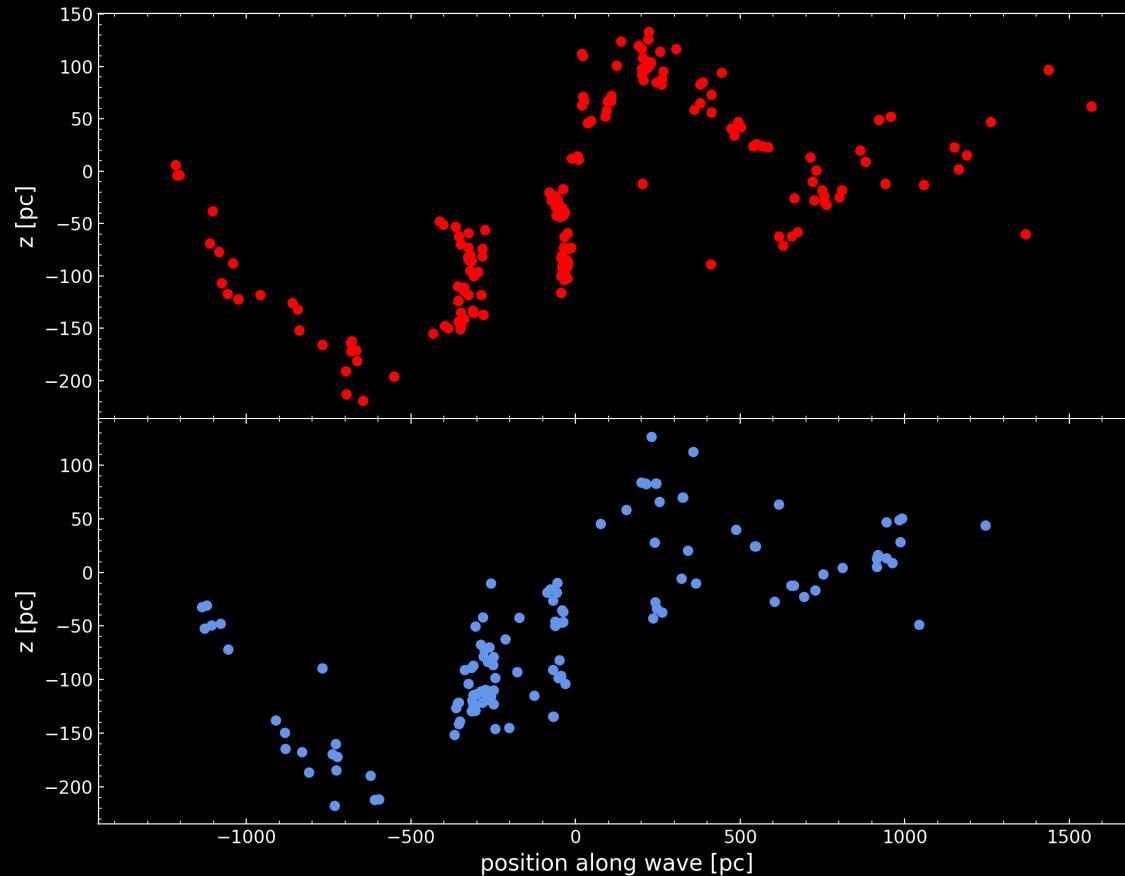
Gaia DR2

Alves et al. 2022

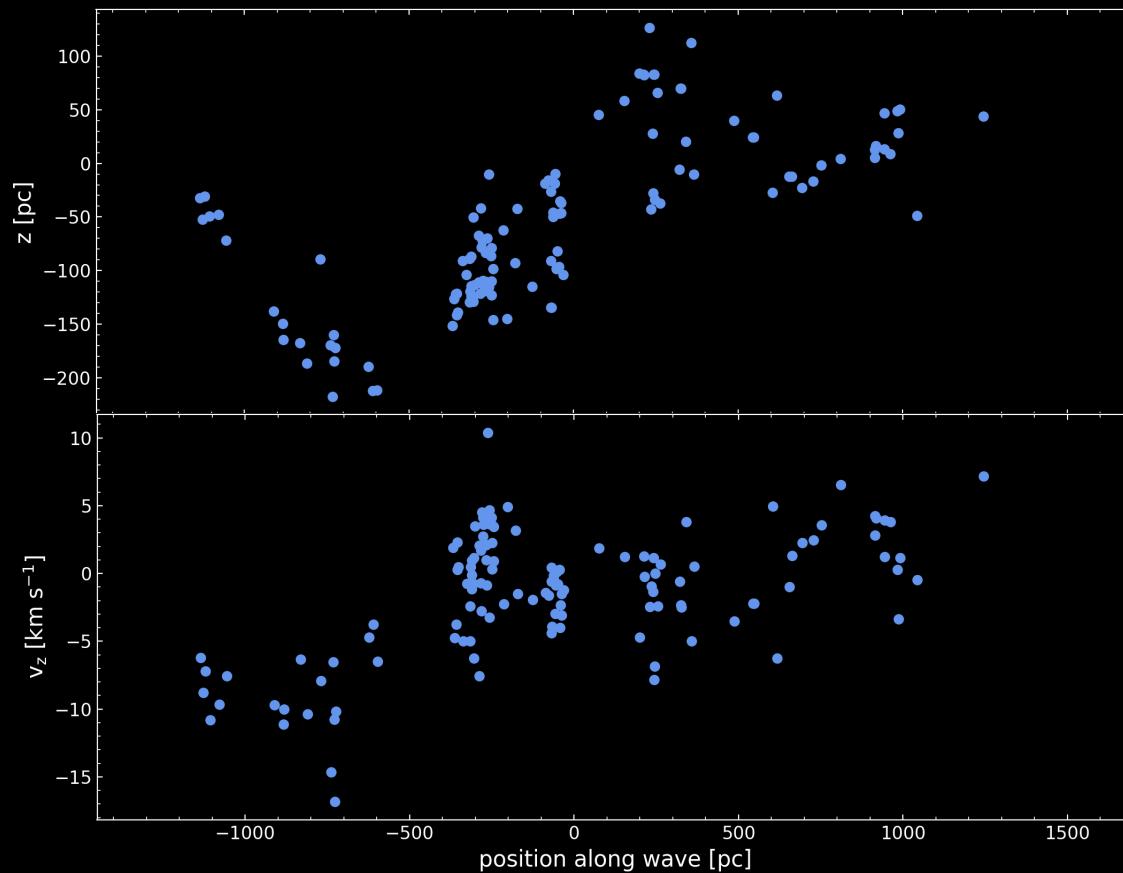
CantatGaudin et al. 2020 – Sim et al. 2019
Liu et al. 2019 – Szilagyi et al. 2021 – He et al. 2022



Reminder:
Dust clouds in **red** trace star forming regions in **blue**

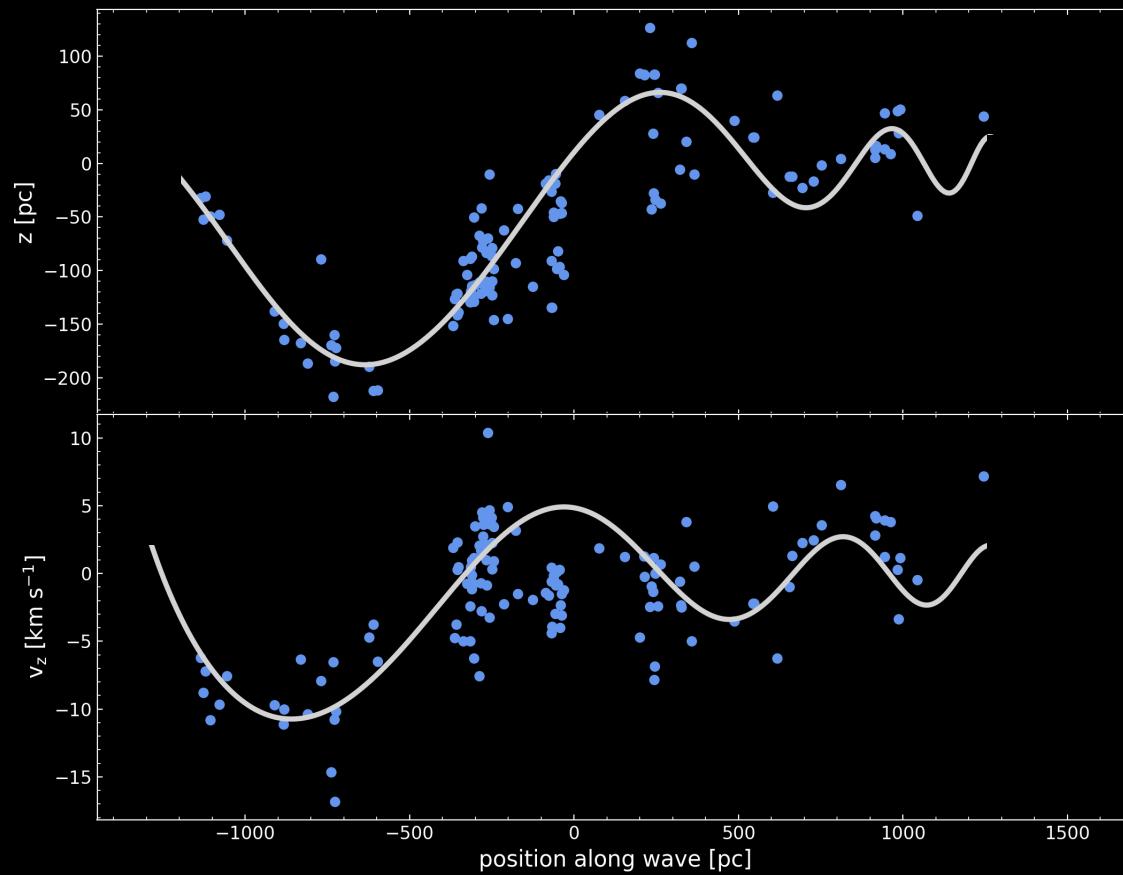


Stellar Cluster - Vertical Motion



Kinematics of the Radcliffe Wave – Ralf Konietzka

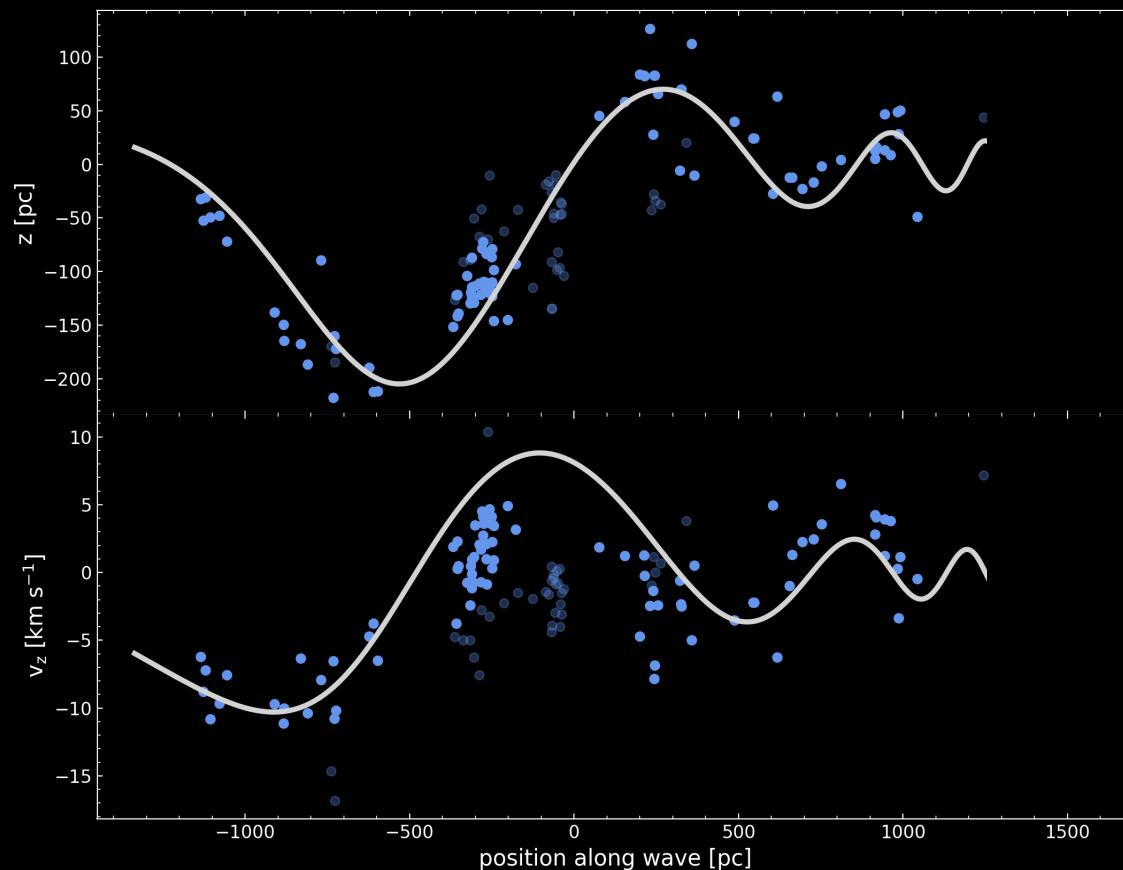
Stellar Cluster - Vertical Motion



Kinematics of the Radcliffe Wave – Ralf Konietzka

Stellar Cluster - Vertical Motion

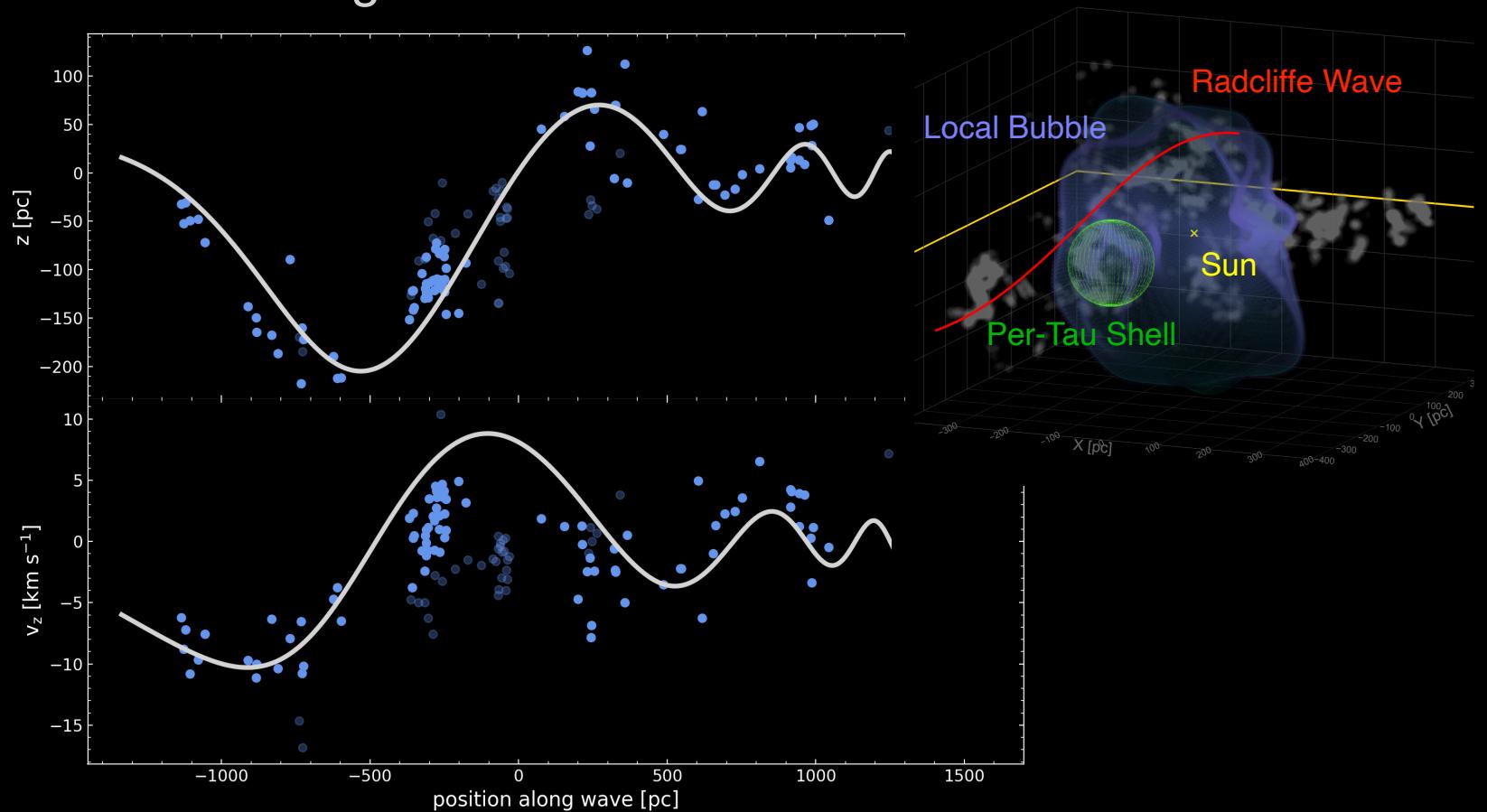
Including Gravitational Potential



Kinematics of the Radcliffe Wave – Ralf Konietzka

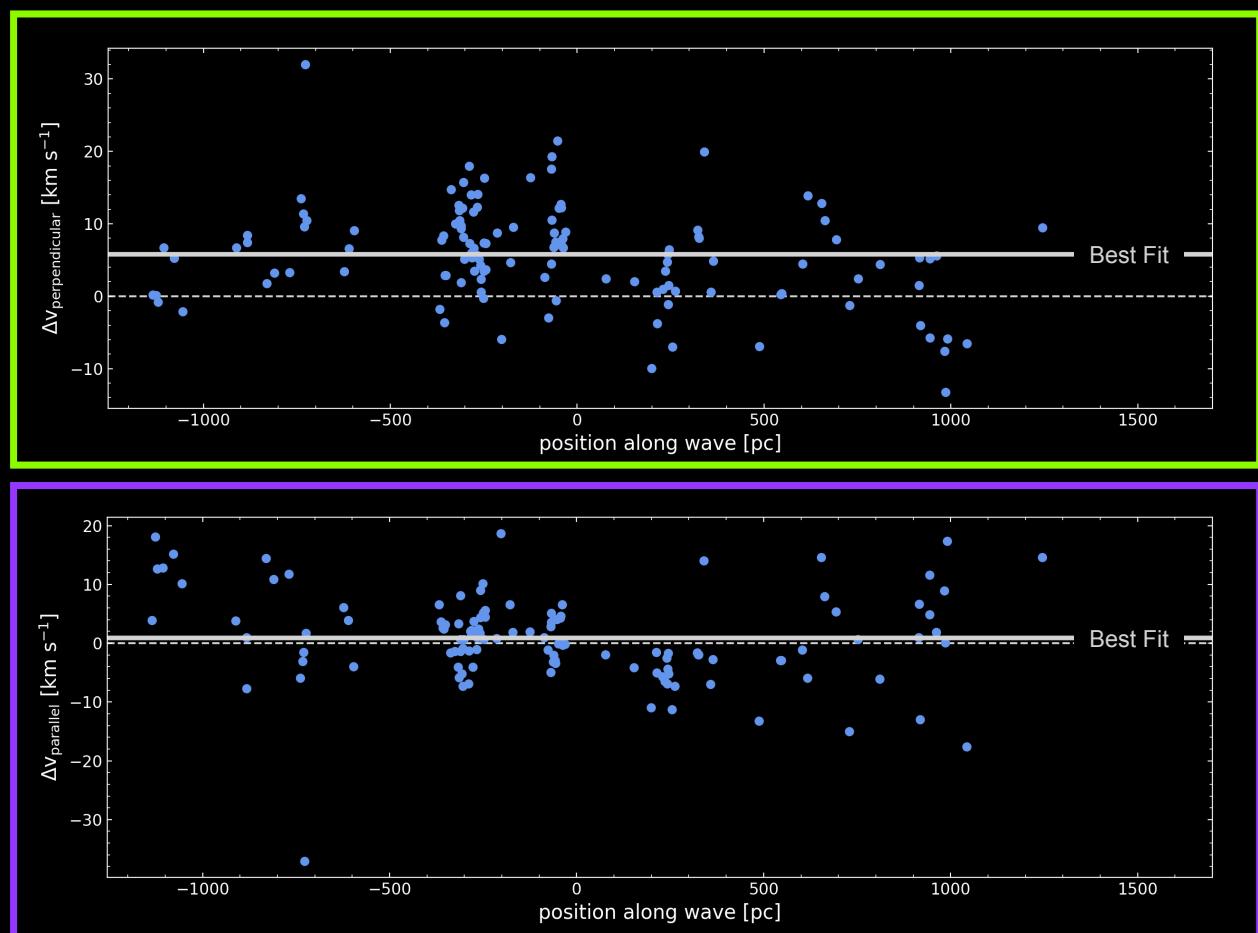
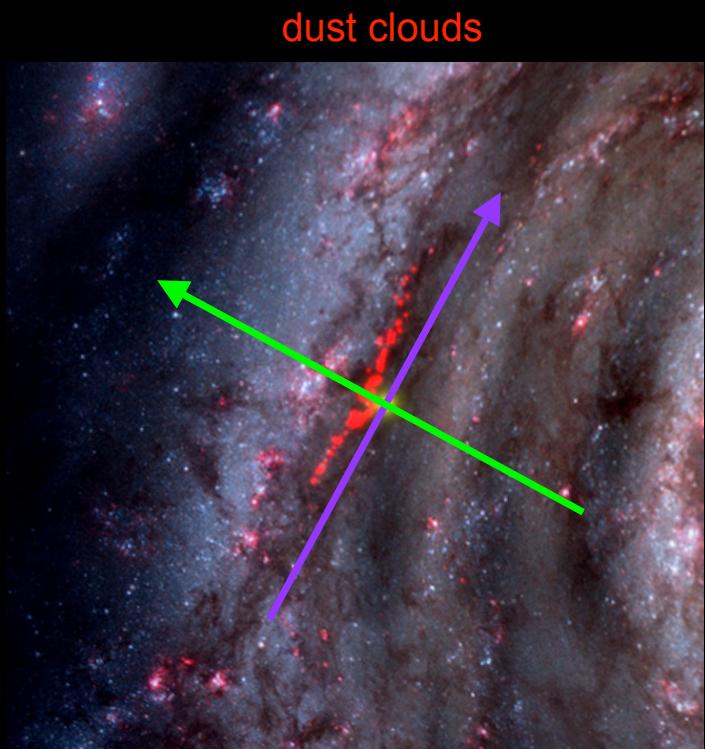
Stellar Cluster - Vertical Motion

Including Gravitational Potential



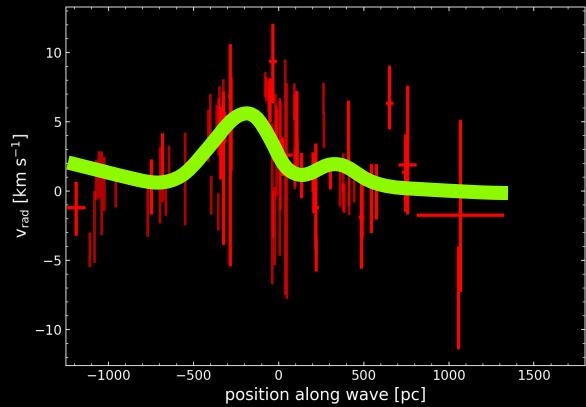
Kinematics of the Radcliffe Wave – Ralf Konietzka

Stellar Cluster - In Plane Motion

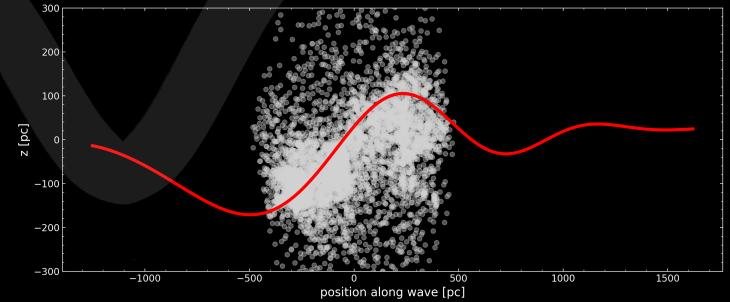


Kinematics of the Radcliffe Wave – Ralf Konietzka

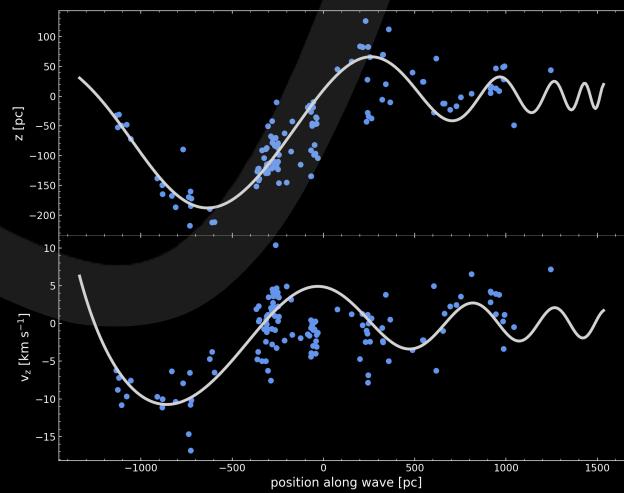
Gas - ^{12}CO



Stars



Stellar Cluster



Kinematics of the Radcliffe Wave – Ralf Konietzka