This folder contains 2 program files:

1. “3D-Cell-motion-with-stochastic-perturbation.f90” : This is a FORTRAN-90 code that simulates the 3D cell motion in a model of zebrafish posterior tail. The code generates a list of 3D cell positions and velocities over time and save this data in a text file named ‘3D\_cell\_motion.dat'. The code implements a Vicsek dynamics in 3D. For details of the dynamics see Das, Jülich and Schwendinger-Schreck et al., 2018, *Organization of embryonic morphogenesis via mechanical information*. To run the code, a standard FORTRAN compiler (eg. gfortran) is needed.
2. “movie3Dtailbud.m” : This is a Matlab code that reads the data file generated by the Fortran code and produces a movie of cell motion. In the movie, the perturbed cells (with higher cell-cell repulsion) are marked green, and the cells in the posterior neural tube with posterior-to-anterior velocities are marked red.