This repository provides the OpenCL and Matlab codes that simulate the phase separation model (1) from our manuscript, “*Biomolecular condensates bridge experiment and theory of mass-conserving reaction-diffusion systems in phase separation*” by Cheng Li, Man-Ting Guo, Xiaoqing He, Quan-Xing Liu, and Zhi Qi, (2024), submitted, DOI: xxx.

The code and data also were deposited at figshare with DOI: 10.6084/m9.figshare.26057656

### Guide for Code

This folder includes five subfolders, from Fig. 2 to Fig. 6.

**Fig1:**

* Data fit for the response functions.

**Fig2:**

* Fig2b\_code: Contains the numerical simulation codes for Figure 2b.
* Fig2c\_code: Contains the numerical simulation codes for Figure 2c.
* These codes can be run directly with Jupyter Notebook withi OpenCL.

**Fig3:**

* Code folder: Includes the model simulation and data analysis codes using Matlab. It covers structure factor analysis, experimental data, and simulation output.

**Fig4:**

* fig3code, fig4data, and fig4figs folders: Include the code, data, and output results, respectively.

**Fig5:**

* Stores the code and data within different subfolders, respectively.

**Fig6:**

* Contains the data on ripple development from the previously published literature by Ping Lv, Clément Narteau, et al., PNAS 2021 Vol. 118 No. 17 e2024105118. Data is taken from Figure 5(B).

### Questions:

Please contact Quan-Xing Liu (qx.liu@sjtu.edu.cn) for any questions.

Note that within the codes symbol of beta and k2 should be switch for their value.