

Repository for “*The formation of continental fragments in subduction settings: the importance of structural inheritance and subduction system dynamics*”

Journal of Geophysical Research: Solid Earth

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This repository contains files and data used for conducting experiments and visualization of results originally presented in the accompanying paper. These files allow for reproduction and validation of the experiments. We the raw output for all experiments presented in the paper, which were used in the production of relevant figures.

The experiments were conducted using a version of the open source code Citcom. It is based on the code utilized by Magni et al. (2017). For more details on the code, the reader is referred to the manuscript and references therein.

The Citcom code itself can be obtained from doi: [10.5281/zenodo.3588268](https://doi.org/10.5281/zenodo.3588268)

The following files are present in this repository:

- 1) All input files used to for the experiments presented in the manuscript.
- 2) A collection of Matlab scripts used to read the raw output data into Matlab and to create .vtk and .pvd files. Note: to read all data use “*read_all_data.m*” script. To create .vtk files use “*createvtk(_strainr).m*” files. To create .vtr and .pvd files, see: “*create_pvd.m*” file.
- 3) A series of .vtr and .pvd files for each 3D experiment presented in the manuscript. The .vtr and .pvd files can be viewed and manipulated using the open-source software *Paraview*. Loading the .pvd files into Paraview will load all 15 exported time steps into Paraview. We provide two different .vtr/.pvd files:
 - i) “*folder*”_*[num]*.vtr/pvd:
Contains general experimental output (eg. velocity, viscosity, temperature, composition).
 - ii) “*folder*”_STR_*[num]*.vtr/pvd:
Contains $\log_{10}$ (second invariant of the strainrate) output.

As the naming convention originally used by the author differs from that used in the final manuscript and accompanying supplementary information, we provide a list that links the folder name to the corresponding experiment as presented in the accompanying paper on the next page.

README for deposited data and files accompanying “*The formation of continental fragments in subduction settings: the importance of structural inheritance and subduction system dynamics*” by van den Broek et al. (2020) in *Journal of Geophysical Research: Solid Earth*.

Folder name	Corresponding experiment
mop10.oceanic2D.ref	oceanic2D_ref (supplementary material)
mop10.oceanic3D.ref	oceanic3D_ref (supplementary material)
mop10.oceanic3D.wx01.u05	oceanic3D_wz (supplementary material)
r.mop10.3D.ref	assym3D_ref (supplementary material/ Fig. 3)
r.mop10.3D.woc250.wx01.u05	3D_Rcoc0.6 (Figs. 3,5,6)
r.mop10.3D.woc200.wx01.u05	3D_Rcoc1.0 (Figs. 5,6)
r.mop10.3D.woc225.wx01.u05	3D_Rcoc0.78 (Fig. 5)
r.mop10.3D.woc275.wx01.u05	3D_Rcoc0.45 (Fig. 5)
r.mop10.3D.woc250.a015.wx01.u05	3D_Rcoc0.6_a345 (Fig. 6)
r.mop10.3D.woc250.a345.wx01.u05	3D_Rcoc0.6_a15 (Fig. 6)
r.mop10.3D.woc200.a015.wx01.u05	3D_Rcoc1.0_a345 (Figs. 6,7)
r.mop10.3D.woc200.a345.wx01.u05	3D_Rcoc1.0_a15 (Fig. 6)

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