

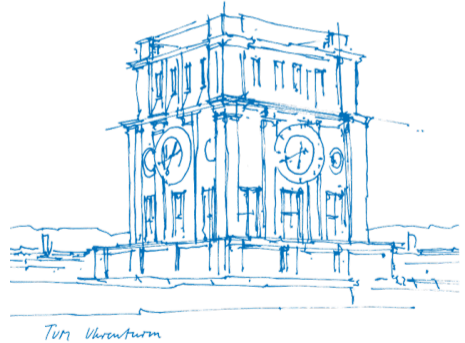
What is new in preCICE?

preCICE Workshop 2023

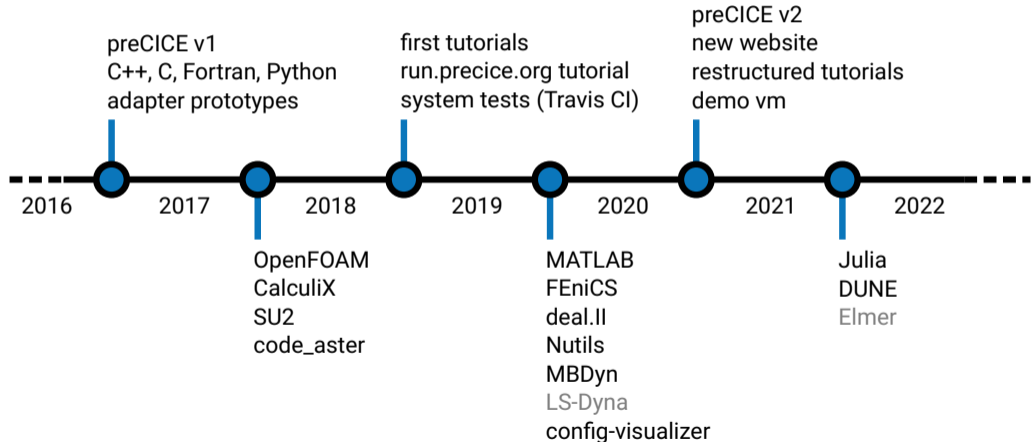
Gerasimos Chourdakis

Technical University of Munich

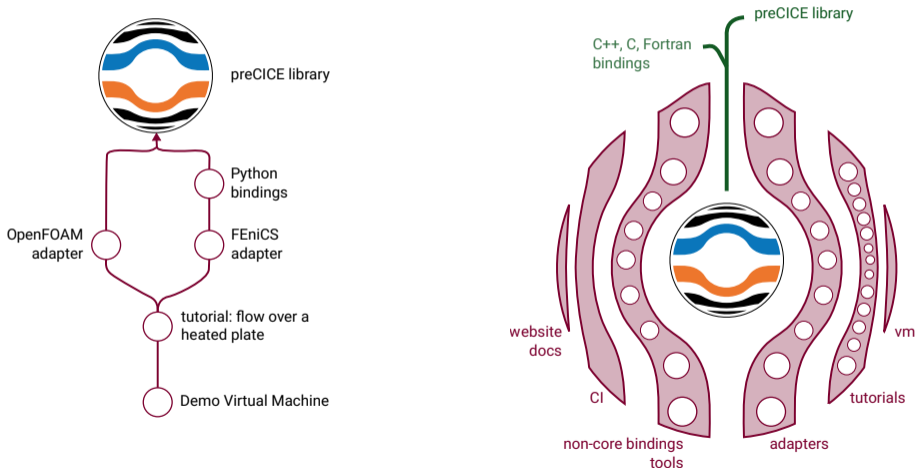
February 14, 2023



So much going on!



Multiple components, in multiple layers



preCICE library

preCICE tools at your fingertip

`binprecice` has been renamed and is now useful (again):

- Check your configuration (dry-run):
`precice-tools check precice-config.xml`
- Find out your preCICE version:
`precice-tools version`

More to come – See Frédéric's talk tomorrow

Configuration checker

```
$ precice-tools check precice-config.xml  
ERROR: Data with name "forces" used by mesh "Solid" is  
not defined. Please define a data tag with name="forces".
```

- Checks XML structure: Typos in tags and attribute names
- Checks names of Participants, Meshes, Data
- Cannot check coupling logic
Is data actually exchanged in a coupling scheme?

Exporting meshes is now cleaner and more versatile

- `<export:vtk />` – legacy VTK
- `<export:vtu />` – modern VTK, UnstructuredGrid
- `<export:vtp />` – modern VTK, PolyData
- `<export:csv />` – post-process in any tool

Debug messages in release builds

```
<log>  
  <sink filter="%Severity% >= debug"  
    format="---[precice] %ColorizedSeverity% %Message%" enabled="true" />  
</log>
```

Debug messages in release builds

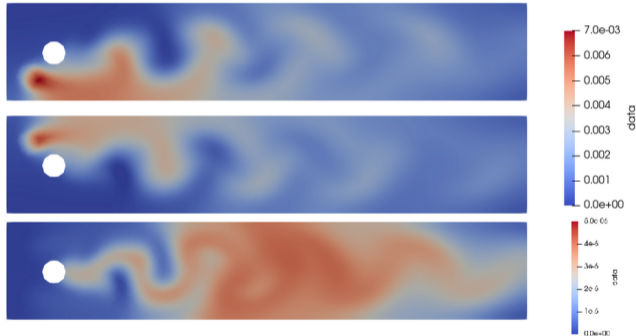
```
<log>  
  <sink filter="%Severity% >= debug"  
    format="---[precice] %ColorizedSeverity% %Message%" enabled="true" />  
</log>
```

```
$ cmake -DCMAKE_BUILD_TYPE=Release \  
  -DPRECICE_RELEASE_WITH_DEBUG_LOG=YES ..
```

Slower, but usable.

New mapping: Linear cell interpolation

Nearest projection mapping meets volume coupling



Master's Thesis of Boris Martin

New mapping: Linear cell interpolation

```
<participant name="Flow">
  <use-mesh name="Flow-Mesh" provide="yes" />
  <use-mesh name="Chemical-Mesh" from="Chemical" />
  <write-data name="Velocity" mesh="Flow-Mesh" />
</participant>

<participant name="Chemical">
  <use-mesh name="Chemical-Mesh" provide="yes" />
  <use-mesh name="Flow-Mesh" from="Flow" />
  <read-data name="Velocity" mesh="Chemical-Mesh" />
  <mapping:linear-cell-interpolation
    direction="read"
    from="Flow-Mesh"
    to="Chemical-Mesh"
    constraint="consistent" />
</participant>
```

Skip the mapping: Direct mesh access (since v2.3)

```
<participant name="Dirichlet">
  <use-mesh name="Dirichlet-Mesh" provide="yes" />
  <use-mesh name="Neumann-Mesh" from="Neumann" direct-access="true" />
  <write-data name="Heat-Flux" mesh="Neumann-Mesh" />
  <read-data name="Temperature" mesh="Dirichlet-Mesh" />
</participant>

<participant name="Neumann">
  <use-mesh name="Neumann-Mesh" provide="yes" />
  <use-mesh name="Dirichlet-Mesh" from="Dirichlet" direct-access="true" />
  <write-data name="Temperature" mesh="Dirichlet-Mesh" />
  <read-data name="Heat-Flux" mesh="Neumann-Mesh" />
</participant>
```

```
// Get relevant IDs. Note that "ReceivedMeshname" is not a name of a  
// provided mesh, but a mesh defined by another participant. Accessing  
// a received mesh directly is disabled in a usual preCICE configuration.  
const int otherMeshID = precice.getMeshID("ReceivedMeshName");  
const int writeDataID = precice.getDataID("WriteDataName", otherMeshID);  
  
// Define region of interest, where we want to obtain the direct access.  
// See also the API documentation of this function for further notes.  
precice.setMeshAccessRegion(otherMeshID, boundingBox.data());
```

```
// Get relevant IDs. Note that "ReceivedMeshname" is not a name of a
// provided mesh, but a mesh defined by another participant. Accessing
// a received mesh directly is disabled in a usual preCICE configuration.
const int otherMeshID = precice.getMeshID("ReceivedMeshName");
const int writeDataID = precice.getDataID("WriteDataName", otherMeshID);

// Define region of interest, where we want to obtain the direct access.
// See also the API documentation of this function for further notes.
precice.setMeshAccessRegion(otherMeshID, boundingBox.data());

...

// Now finally get the data. First allocate memory for the IDs and the
// vertices
std::vector<double> otherSolverVertices(otherMeshSize * dim);
std::vector<int> ids(otherMeshSize);
// ... and afterwards ask preCICE to fill the vectors
precice.getMeshVerticesAndIDs(otherMeshID,
                              otherMeshSize,
                              ids.data(),
                              otherSolverVertices.data());
```

Skip the mapping: Direct mesh access – now a tutorial!

Partitioned heat conduction (direct access setup)

Summary: This tutorial is a modified version of the “partitioned heat conduction” tutorial showcasing direct mesh access.

Ask David for more details

New version macros

Make your adapter work with multiple preCICE versions:

```
#ifndef PRECICE_VERSION_GREATER_EQUAL
    // compatibility with older versions
    #define PRECICE_VERSION_GREATER_EQUAL(x,y,z) FALSE
#endif

#if PRECICE_VERSION_GREATER_EQUAL(2,5,0)
    setMeshTetrahedron(...)
#endif
```

preCICE ecosystem

preCICE Distribution v2211.0

Citable collection of packages
working together.

doi [10.18419/darus-2613](https://doi.org/10.18419/darus-2613)

(v2202.0, v2211.0 DOI pending)

New versions

As always, we keep updating components. In this distribution release, find:

- [OpenFOAM adapter](#) [3](#) v1.2.0, with support for more solvers and features ([release notes](#)).
- [CalculiX adapter](#) v2.20.0, with many bugfixes and updates for CalculiX 2.20 ([release notes](#)).
- [FEniCS adapter](#) v1.4.0, with more capabilities for providing mesh connectivity ([release notes](#)).
- Further [updates to the deal.II adapter](#) [1](#) and to more components.

v2211.0

preCICE distribution v2211.0 (publishing to DaRUS pending)

This is the last release that works with preCICE v2.x.

It comprises the following components:

- preCICE: [v2.5.0](#) [↗](#)
- Tools:
 - ASTE: [v3.0.0](#) [↗](#) (new)
 - config-visualizer: commit [60f2165](#) [↗](#) (new)
 - ci-images: commit [f48c7e8](#) [↗](#) (new)
- Bindings:
 - Fortran module: commit [9e3f405](#) [↗](#)
 - Julia bindings: [v2.5.0](#) [↗](#) (new and experimental)
 - Matlab bindings: [v2.5.0.0](#) [↗](#)
 - Python bindings: [v2.5.0.1](#) [↗](#)
- Adapters:
 - CalculiX adapter: [v2.20.0](#) [↗](#)
 - code_aster adapter: commit [ce995e0](#) [↗](#) (same as in v2202.0)
 - deal.II adapter: [dbb25be](#) [↗](#)
 - DUNE adapter: commit [5f2364d](#) [↗](#) (same as in v2202.0, experimental)
 - FEniCS adapter: [v1.4.0](#) [↗](#)
 - OpenFOAM adapter: [v1.2.0](#) [↗](#)
 - SU2 adapter: [ab84387](#) [↗](#) (same as in v2202.0)
- Tutorials: [v202211.0](#) [↗](#)
- vm: [v202211.0.0](#) [↗](#)
- Website and documentation: [v202211.0.0](#) [↗](#), [libprece2_2.2.5_docs_v202211.0.0.pdf](#) [↗](#)

New tool: ASTE

Artificial Solver Testing Environment (ASTE)

Summary: ASTE is a lightweight wrapper around the preCICE API, which allows emulating participants to investigate simulation setups.

Command line interface

After the installation procedure, the following executables are available

- `precice-aste-run`: core module interfacing with preCICE
- `precice-aste-evaluate`: python tool to compute and store data on mesh files
- `precice-aste-partition`: python tool to partition a single mesh file into several ones for parallel runs
- `precice-aste-join`: python tool to join several mesh files into a single mesh file for parallel runs.

New tool: ASTE (in the course pt4)

Task 4: Replay Generator with ASTE

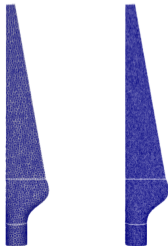
The second use case of ASTE is to replay single participants. This can be helpful to avoid re-computations of expensive parts of coupled simulations.

```
{
  "participant": "Generator",
  "startdt": "1",
  "meshes": [
    {
      "mesh": "Generator-Mesh",
      "meshfileprefix": "./precice-output/Generator-Mesh-Generator",
      "write-data": {
        "scalar": ["Data"]
      }
    }
  ],
  "precice-config": "../precice-config.xml"
}
```

New tool: ASTE (in the tutorials)

ASTE (artificial solver testing environment) wind turbine blade tutorial

Summary: This tutorial is an example case for ASTE, where we investigate different preCICE mappings using ASTE.



Julia bindings getting in shape

PreCICE.jl

license **LGPL-3.0**

This package provides Julia language bindings for the C++ library [preCICE](#). It is a Julia package that wraps the API of preCICE.

Note that the first two digits of the version number of the bindings indicate the preCICE major and minor version that the bindings support. The last digit represents the version of the bindings. Example: `v2.5.1` and `v2.5.2` of the bindings represent versions `1` and `2` of the bindings that are compatible with preCICE `v2.5.0`.

Contributors 4



pavelkharitenko



erikscheurer



IshaanDesai Ishaan Desai



kursatyurt Kürşat Yurt

The OpenFOAM adapter now works with solids4foam

Adds functionality to allow FSI to work with solids4foam as the solid solver
#236

New issue

Merged MakisH merged 23 commits into `preCICE:develop` from `solids4foam:develop` on Aug 8, 2022

Conversation 48 Commits 23 Checks 4 Files changed 13 +148 -43

solids4foam commented on Jul 28, 2022 • edited by MakisH

This pull request adds functionality to allow FSI to work with solids4foam as the solid solver.

TODO list:

- I updated the documentation in `docs/`: I don't think I need to change anything here, do I?
- I added a changelog entry in `changelog-entries/` (create directory if missing): apologies, I am not sure what I meant to add here.

2 ❤️ 1 🚩

Philip Cardiff added 2 commits 7 months ago

Reviewers

- davidscn
- MakisH ✓

Assignees

No one assigned

Labels

None yet

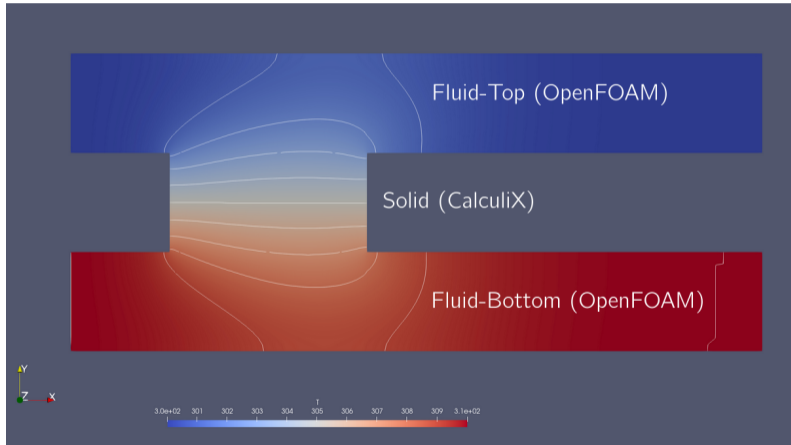
Projects

More on Philip Cardiff's talk later today

The OpenFOAM adapter now works with solids4foam

```
~/repos/precice/tutorials/perpendicular-flap [(v202211.0)]$ tree -L 1
.
├── clean-tutorial.sh -> ../tools/clean-tutorial-base.sh
├── fluid-nutils
├── fluid-openfoam
├── fluid-su2
├── images
├── plot-all-displacements.sh
├── plot-displacement.sh
├── precice-config.xml
├── precice-run
├── README.md
├── solid-calculix
├── solid-dealii
├── solid-dune
├── solid-fenics
├── solid-openfoam
└── solid-solids4foam ←
```

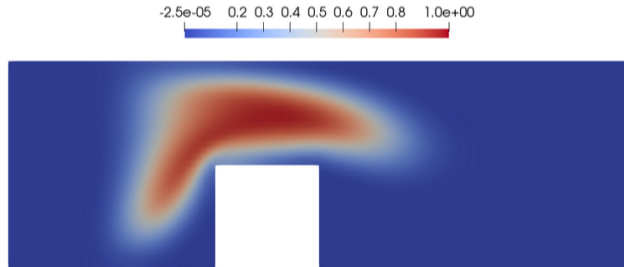
New tutorial: Simplified heat exchanger



New tutorial: Channel transport (volume coupling)

Channel transport

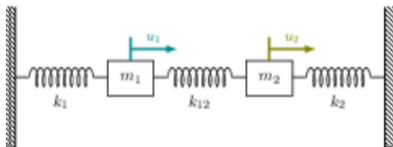
Summary: A CFD problem is coupled to a transport (of, e.g., a chemistry species) in a uni-directional way.



New tutorial: Oscillator

Setup

This tutorial solves a simple mass-spring oscillator with two masses and three springs. The system is cut at the middle spring and solved in a partitioned fashion:



New tutorial case: DUNE-FEM



NiklasKotarsky commented on Apr 28, 2022 • edited ▾

Contributor 😊 ...

New solid solver for the tutorial flow over heated plate. The solver uses Dune-fem's python bindings <https://www.dune-project.org/sphinx/dune-fem/>. Joint work with @uekerman and @dr-robertk. Code base inspired from <https://github.com/PeterMeisrimel/asynch-WFR>.



```
~/repos/precice/tutorials/flow-over-heated-plate [(v202211.0)]$ tree -L 1
```

```
├── clean-tutorial.sh -> ../tools/clean-tutorial-base.sh
├── fluid-openfoam
├── images
├── plot-final-interface-temperature.py
├── plot-final-interface-temperature-requirements.txt
├── precice-config.xml
├── README.md
├── solid-dunefem ←
├── solid-fenics
├── solid-nutils
└── solid-openfoam
```

Current work

More on other talks today/tomorrow

The OpenFOAM adapter will soon offer better flow coupling

Custom Inlet-Outlet Boundary conditions for fluid-fluid coupling #274

Edit

New Issue



thesamriel opened this issue 2 weeks ago · 1 comment



thesamriel commented 2 weeks ago

Collaborator

The flow direction at the fluid-fluid coupling interface might not stay constant over the course of the simulation. Therefore, it is useful to use inlet-outlet boundary conditions that switch their behavior according to the flow direction.

The `inletOutlet` and `outletInlet` conditions work with `zeroGradient` and `fixedValue` behaviors.

In my [thesis](#) I showed that we achieve better results by using e.g. `fixedFluxExtrapolatedPressure` instead of a pressure gradient condition. To implement this behavior in an inlet-outlet boundary condition, we need to provide custom boundary conditions.

These can be compiled with the adapter and then be used as the boundary conditions at the coupling boundaries. I would recommend them to users, since they can be set on both sides on the interface.

We also need to adjust the `write()` and `read()` methods for the affected variables to work with these new boundary conditions.

Assignees

No one—assign yourself



Labels

FF



Projects

None yet



Milestone

No milestone



Development



Master's thesis of Markus Mühlhäußer – See talk tomorrow

The OpenFOAM adapter will soon support volume coupling

Volume coupling #255

 Draft **tirgendetwas** wants to merge 51 commits into `develop` from `volume-coupling` 

 Conversation 20


 Commits 51

 Checks 8

 Files changed 8



tirgendetwas commented on Oct 4, 2022 • edited ▾

Collaborator 



This is a solution to issue [#229](#).


Volume coupling implementation for the OpenFOAM adapter. Our main goals are:

- 1. The coupling is integrated with existing features** (currently planned for FF and CHT modules):
We started building upon PR [#183](#) but have since decided against a separate Volume Coupling module. The volume coupling is being implemented for each state variable (each variable which would make sense to couple over a volume).
- 2. Configurable coupling region:**
The approach would be similar to PR [#88](#), details will follow.

The OpenFOAM adapter will soon support volume coupling


Channel transport with OpenFOAM #315

 Draft **tirgendetwas** wants to merge 11 commits into `develop` from `channel_transport_0F` 

 Conversation 8


 Commits 11

 Checks 3

 Files changed 13



tirgendetwas commented on Dec 5, 2022 • edited ▾

Collaborator  ...

Channel transport tutorial using OpenFOAM for the fluid participant (and Nutils for the transport participant).


Tested with `serial-explicit` and `parallel-explicit` coupling, with sequential and parallel (MPI) runs for the OpenFOAM solver.

Student project (IDP) of Tina Vladimirova

The SU2 adapter will soon be up-to-date


Updated for SU2 v7.5.0 Blackbird #30

 Open

j-signorelli wants to merge 31 commits into `precice:develop` from `j-signorelli:develop` 

 Conversation 25

 Commits 31

 Checks 0

 Files changed 33



j-signorelli commented on Nov 24, 2022

First-time contributor



Adapter has been updated to work with SU2 Blackbird, and has been tested with Calculix using perpendicular-flap test case found in "tests" folder. Image below shows results, which visually matches results found [here](#).


More verification tests likely to follow.


Community contribution (whoever you are, thank you!)

Upcoming tutorial cases: FSI with two-phase flows

Adds breaking dam test cases #279

 Draft

KyleDavisSA wants to merge 21 commits into `develop` from `breaking-dam-2d` 

 Conversation 35

 Commits 21

 Checks 5

 Files changed 79



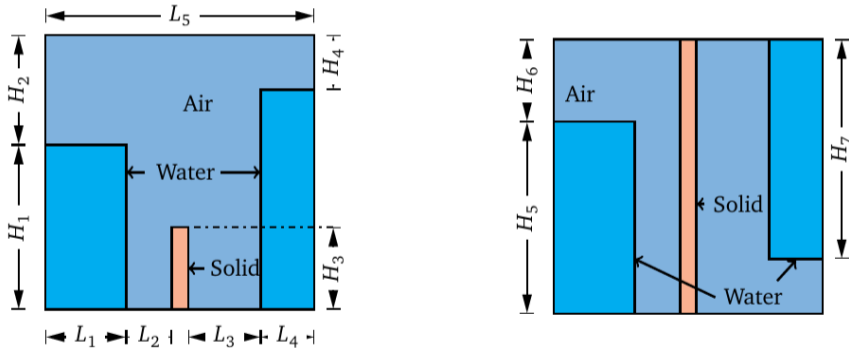
KyleDavisSA commented on Jun 29, 2022 • edited ▾

Member



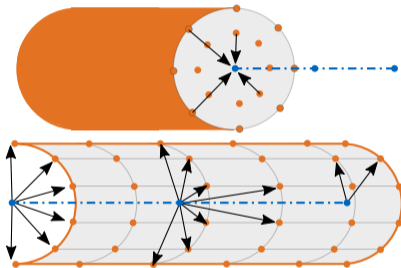
This PR adds a breaking dam 2D and breaking dam 3D test case for multiphase flow of water/air mixture, where a body of water strikes a solid, deformable wall.

Upcoming tutorial cases: FSI with two-phase flows



Part of Kyle Davis' (defended!) PhD

Geometric multiscale coupling




RadialGeoMultiscale #1552

 Draft ezonta wants to merge 6 commits into `precice:develop` from `ezonta:RadialGeoMultiscale` 

 Conversation 0

 Commits 6

 Checks 20

 Files changed 10



ezonta commented 3 weeks ago

First-time contributor

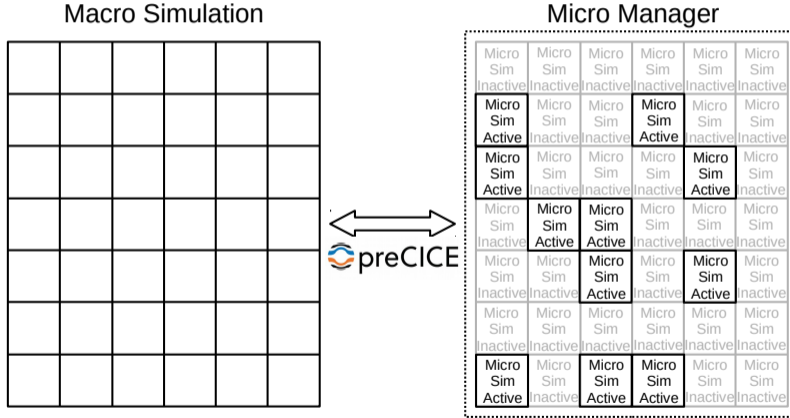


Main changes of this PR

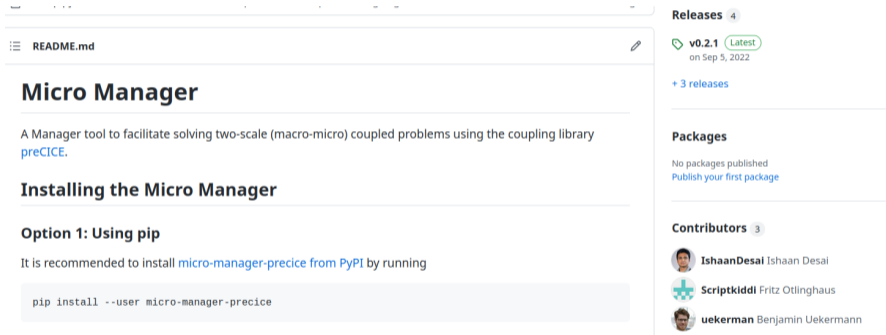
Adds radial geometric multiscale mapping to preCICE. Builds on top of `AxialGeoMultiscaleMapping`.

We are getting there (thanks, Elia Zonta!)

Coupling macroscopic and microscopic simulations



Coupling macroscopic and microscopic simulations



The screenshot shows the GitHub repository page for 'Micro Manager'. The main content area displays the README.md file with the following text:

Micro Manager

A Manager tool to facilitate solving two-scale (macro-micro) coupled problems using the coupling library [preCICE](#).




Installing the Micro Manager

Option 1: Using pip

It is recommended to install [micro-manager-precice](#) from PyPI by running

```
pip install --user micro-manager-precice
```

The right sidebar shows the following information:

- Releases** 4
 - [v0.2.1](#) Latest on Sep 5, 2022
 - [+ 3 releases](#)
- Packages**
 - No packages published
 - [Publish your first package](#)
- Contributors** 3
 -  **IshaanDesai** Ishaan Desai
 -  **Scriptkiddi** Fritz Otlinghaus
 -  **uekerman** Benjamin Uekermann

More on Ishaan's talk later today.

Much faster RBF mapping

Partition of unity based data mappings #1273



dauidscn opened this issue on Apr 28, 2022 · 0 comments · May be fixed by #1483



dauidscn commented on Apr 28, 2022

Member



Please describe the problem you are trying to solve.

Our currently available mapping methods are either limited in terms of the convergence order (NN), limited in terms of computational cost (RBFs) or require additional information (NP and NNG). We would like to extend the available mapping concepts by a partition of unity concept, which is supposed to provide a scalable method for large systems with a higher convergence order.

Describe the solution you propose.

The partition of unity method splits the domain up in several mildly overlapping regions (usually circles) and associates to each subregion a compactly supported weighting function. A mapping problem is solved in each subregion and the global solution is recovered by a weighted sum of all interpolated values in affected subregions. From the user perspective, the mapping should be easily configurable just as the currently available mapping methods. There might be new new configuration parameters for the size of the subregions and the overlap granularity (tbd).

More on David's talk later today.

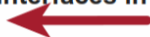
Community

Forum: new job / theses announcement board

[Home](#)[GitHub](#)[Mastodon](#)[YouTube](#)[Sign Up](#)[Log In](#)

preCICE-related PhD positions at the Univ. Stuttgart: Simulation of Skeletal Muscles and Interfaces in Porous Media

Jobs & theses market



Makis Developer

11d

Prof. Miriam Schulte at the Univ. of Stuttgart currently has two openings for PhD positions:

- [Simulation of Skeletal Muscles](#) ²
- [Interfaces in Porous Media](#) ⁵

The positions are at the department of Computer Science, Electrical Eng. & Inform. Techn., IPVS - Institute of Parallel and Distributed Systems, which [you may already know](#) ¹.

Forum: community projects (reminder)

Community projects ▾
all tags ▾
Latest
Top

Topic		Replies	Views	Activity
<p>🚩 About the Community projects category</p> <p>■ inactive</p> <p>Share your simulation cases for everybody to admire and try. Did you make a nice simulation case that you want to share with the rest of the community so that everybody can run it and build upon this? Please open a thre... read more</p>		0	290	Jun '21
<p>Turek-Hron FSI 2 Benchmark</p> <p>■ calculix ■ fsi ■ inactive ■ openfoam</p>		2	719	Oct '22
<p>FSI coupling between OpenFOAM and MBDyn of a cycloidal rotor</p> <p>■ fsi ■ mbdyn ■ openfoam</p>		2	343	Aug '22
<p>Coupled Phase-Field Brittle Fracture Simulation</p> <p>■ fenics ■ nutils</p>		0	361	Apr '21

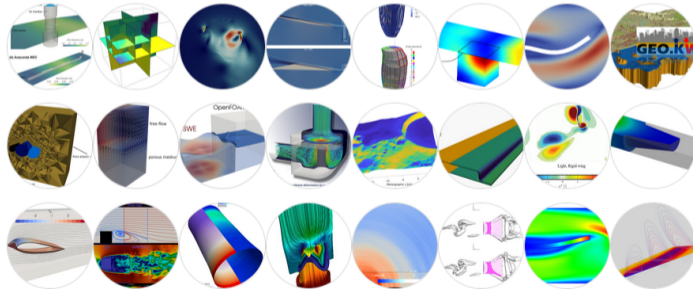
Website: community stories (yours?)

Community

Overview & news
preCICE Workshop 2023
Coupled Problems 2023
Support preCICE
Stories
Contributors
Contribute to preCICE
Community channels
Past events ▼

How our community is using preCICE

We have compiled a community showcase with several of the most impressive preCICE implementations. The range of application fields is diverse, including e.g. simulating the [temperatures on the moon](#), the [biomechanics of the heart valve](#), [modelling wind in urban areas](#), and simulating [high impact loads on structures](#). You can find many more use cases on the [projects page](#).



Do you use preCICE? [Tell us your story](#) and will be happy to feature it here!

Help us maintain preCICE, a tool you rely upon

You support preCICE – preCICE supports you

As the developers of preCICE, we enjoy supporting our academic and industry users, but due to the growing demand, we are not able to service all support requests any more. We are introducing **preCICE support** as a way to contribute to sustainable open-source software development and to ensure preCICE is developed and maintained in the future. Supporting preCICE comes with several benefits:

- **Increased success rate** for your research proposal (include preCICE as a partner, software provider, or sub-contractor)
- **Priority support** and direct access to the preCICE developers
- Private, on-site support and bespoke training

We offer different levels of support for industry and academia.

[Support preCICE - see options >](#)



preCICE v2 paper fully reviewed


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Home > Articles > preCICE v2: A sustainable and user-friendly coupling library

SOFTWARE TOOL ARTICLE

REVISED preCICE v2: A sustainable and user-friendly coupling library [version 2; peer review: 2 approved]

Gerasimos Chourdakis, Kyle Davis, Benjamin Rodenberg, Miriam Schulte, Frédéric Simonis, Benjamin Uekermann, Georg Abrams, Hans-Joachim Bungartz, Lucia Cheung Yau, Ishaan Desai, Konrad Eder, Richard Hertrich, Florian Lindner, Alexander Rusch, Dmytro Sashko, David Schneider, Amin Totounferoush, Dominik Volland, Peter Vollmer, Oguz Ziya Koseomur

This article is included in Marie-Sklodowska-Curie Actions (MSCA) gateway



Open Peer Review

Approval Status ✓✓

	1	2
Version 2 (Revision) 30 Sep 22		
Version 1 29 Apr 22	✓ view	✓ view

- Axelle Viré, Delft University of Technology, Delft, The Netherlands
- Garth Wells, University of Cambridge, Cambridge, UK

preCICE v2 paper fully reviewed



preCICE v2: A sustainable and user-friendly coupling library

Gerasimos Chourdakis, Kyle Davis, Benjamin Rodenberg, Miriam Schulte, Frédéric Simonis, Benjamin Uekermann et al., **2022**. In Open Research Europe, 2:51.

[Publisher's Site](#) [Download BibTeX](#)

[Citations of preCICE v1 paper \(222\) >](#)

[Literature guide >](#)

Updated literature guide

Docs v2.5.0

Fundamentals ▲

Overview

Terminology

Literature guide

Roadmap

Installation ▼

Configuration ▼

Tooling ▼

Provided adapters ▼

Couple your code ▼

Running simulations ▼

Dev docs ▼

Documentation meta ▼

Literature guide

Summary: A guide to the main reference literature for each component and feature of preCICE

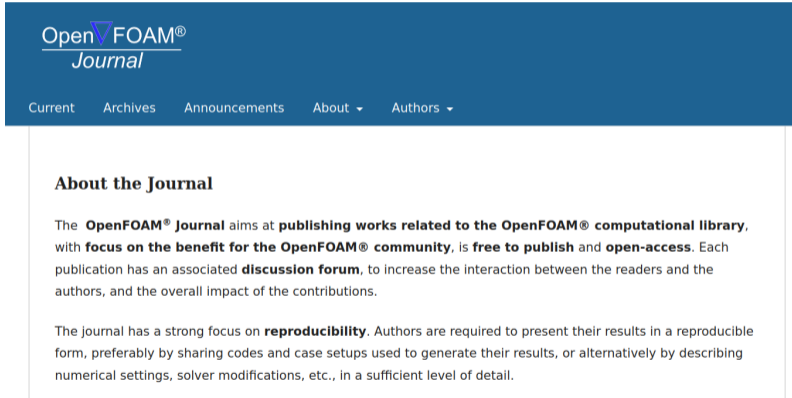
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The literature one can read to understand different aspects of preCICE may feel a bit overwhelming. This page aims to give some starting points and citation guidelines.

Watch out for related research



The screenshot shows the top navigation bar of the OpenFOAM Journal website, which is dark blue with white text. Below the navigation bar is the 'About the Journal' section, which has a white background and is framed by a thin grey border. The 'About the Journal' section contains two paragraphs of text.

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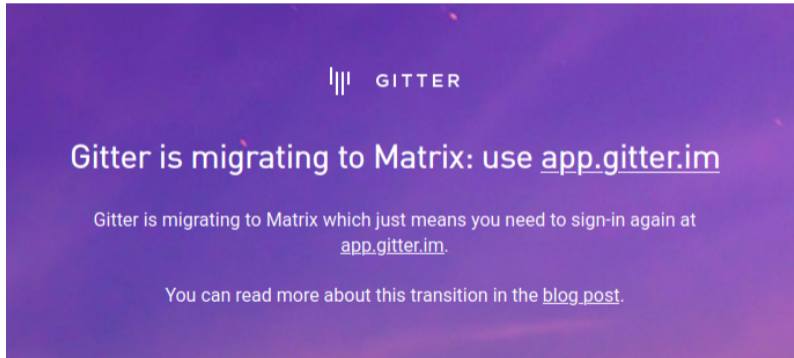
About the Journal

The **OpenFOAM® Journal** aims at **publishing works related to the OpenFOAM® computational library**, with **focus on the benefit for the OpenFOAM® community**, is **free to publish** and **open-access**. Each publication has an associated **discussion forum**, to increase the interaction between the readers and the authors, and the overall impact of the contributions.

The journal has a strong focus on **reproducibility**. Authors are required to present their results in a reproducible form, preferably by sharing codes and case setups used to generate their results, or alternatively by describing numerical settings, solver modifications, etc., in a sufficient level of detail.

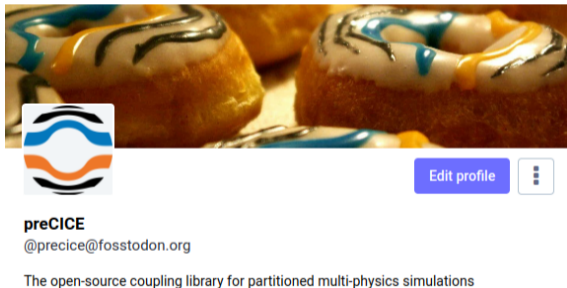
Our developers chatroom is changing

Gitter is merging with Matrix (and it will be confusing for a bit):



preCICE on social media

Now on Mastodon (@precice@fosstodon.org):



preCICE goes to Crete (finally!)



IS14 - Multi-Physics and Multi-Scale Simulations with the Coupling Library preCICE

Organized by: *G. Chourdakis (Technische Universität München, Germany)** and *B. Uekermann (University of Stuttgart, Germany)*

Abstract submission deadline extended to Feb 28,
optional paper submission Mar 31

Wrapping up

Don't miss

Developer talks: Updates on:

- Macro-micro coupling – Ishaan Desai
- Data mapping – David Schneider
- Time interpolation – Benjamin Rodenberg
- preCICE v3 – Frédéric Simonis

World Café: Tell us where to go next

2023 resolution

be part of the “What’s new in preCICE” list
in the preCICE Workshop 2024.

(or simply manage to catch up on all these updates)