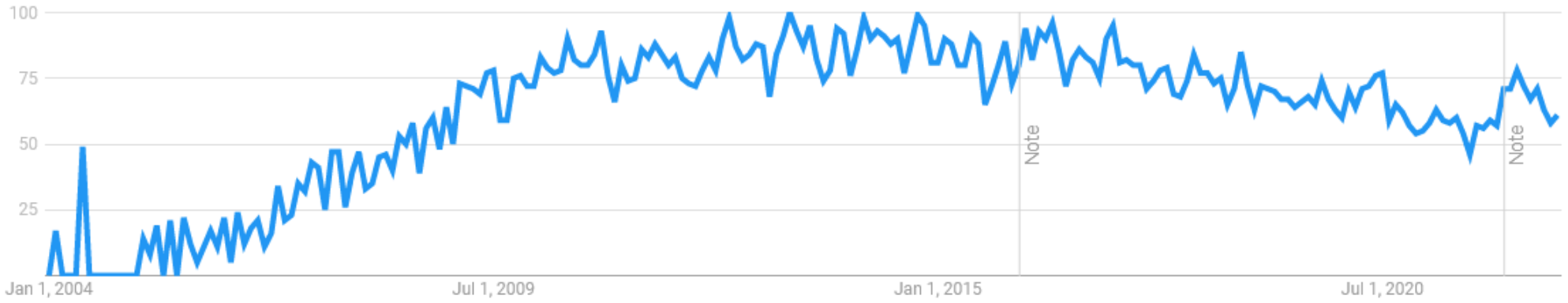
BARAM Revised

2022.9.22

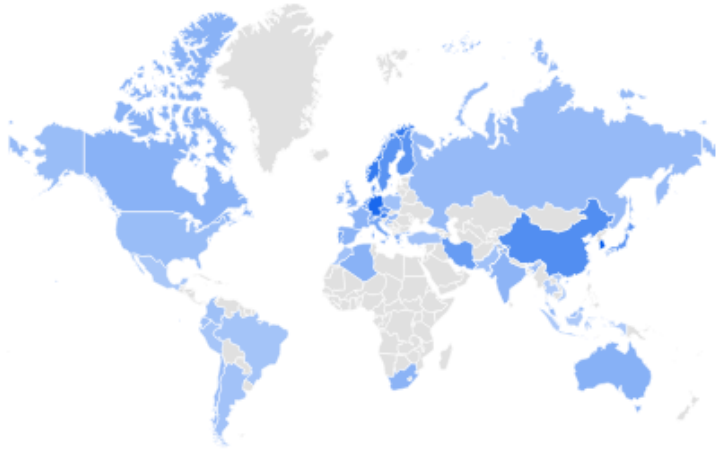
BARAM ?

Interest over time



Interest by region

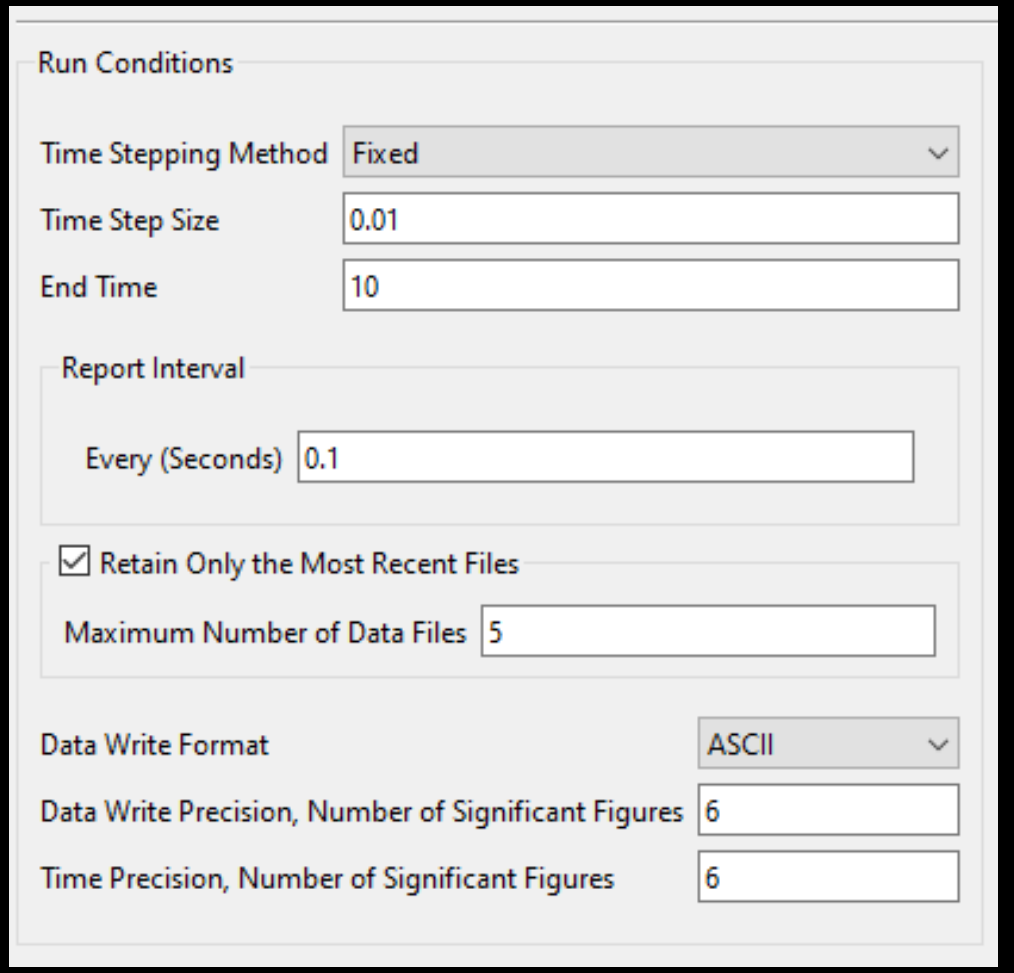
Region



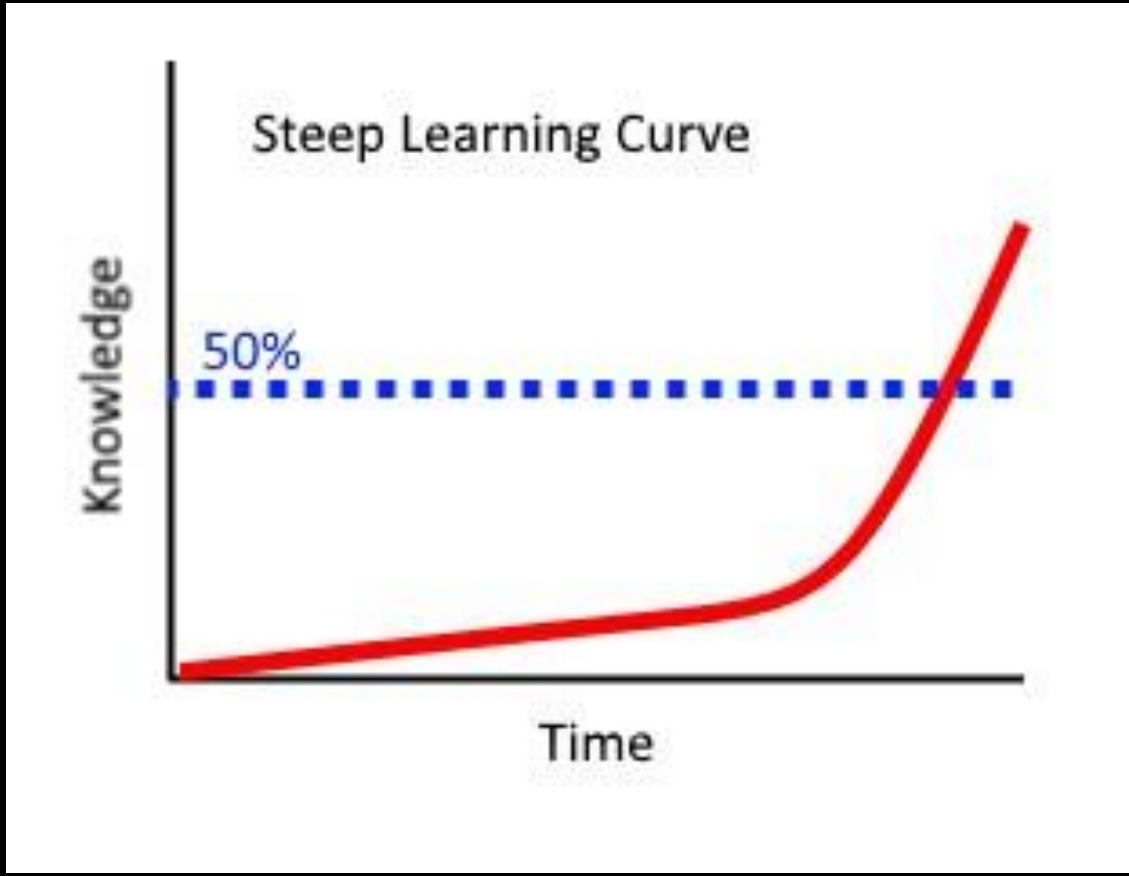
1	South Korea	100
2	Germany	86
3	Norway	71
4	Singapore	65
5	Austria	64

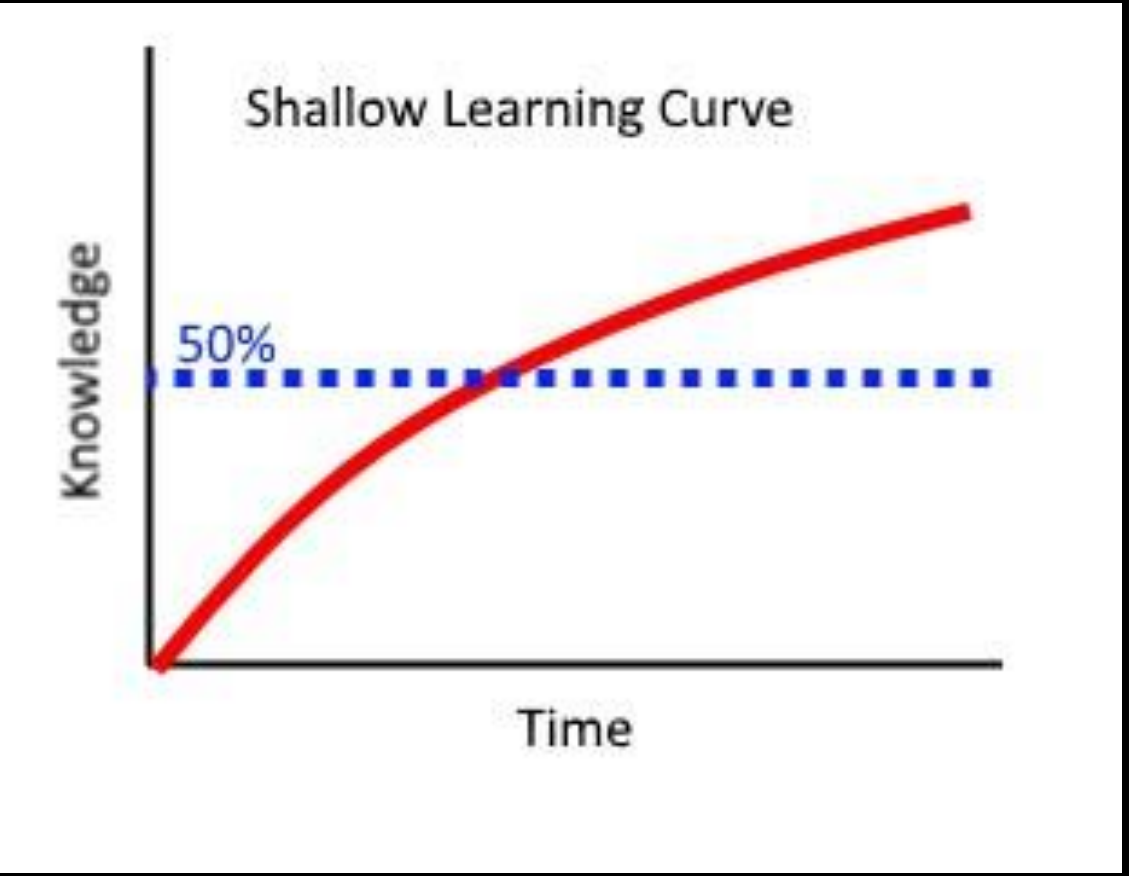
Why GUI (Graphical User Interface) ?

```
application buoyantPimpleNFoam;
startFrom latestTime;
startTime 0;
stopAt writeNow;
endTime 10;
deltaT 0.01;
writeControl runTime;
writeInterval 0.1;
purgeWrite 0;
writeFormat ascii;
writePrecision 6;
writeCompression off;
timeFormat general;
timePrecision 6;
runTimeModifiable yes;
adjustTimeStep no;
maxCo 1;
```

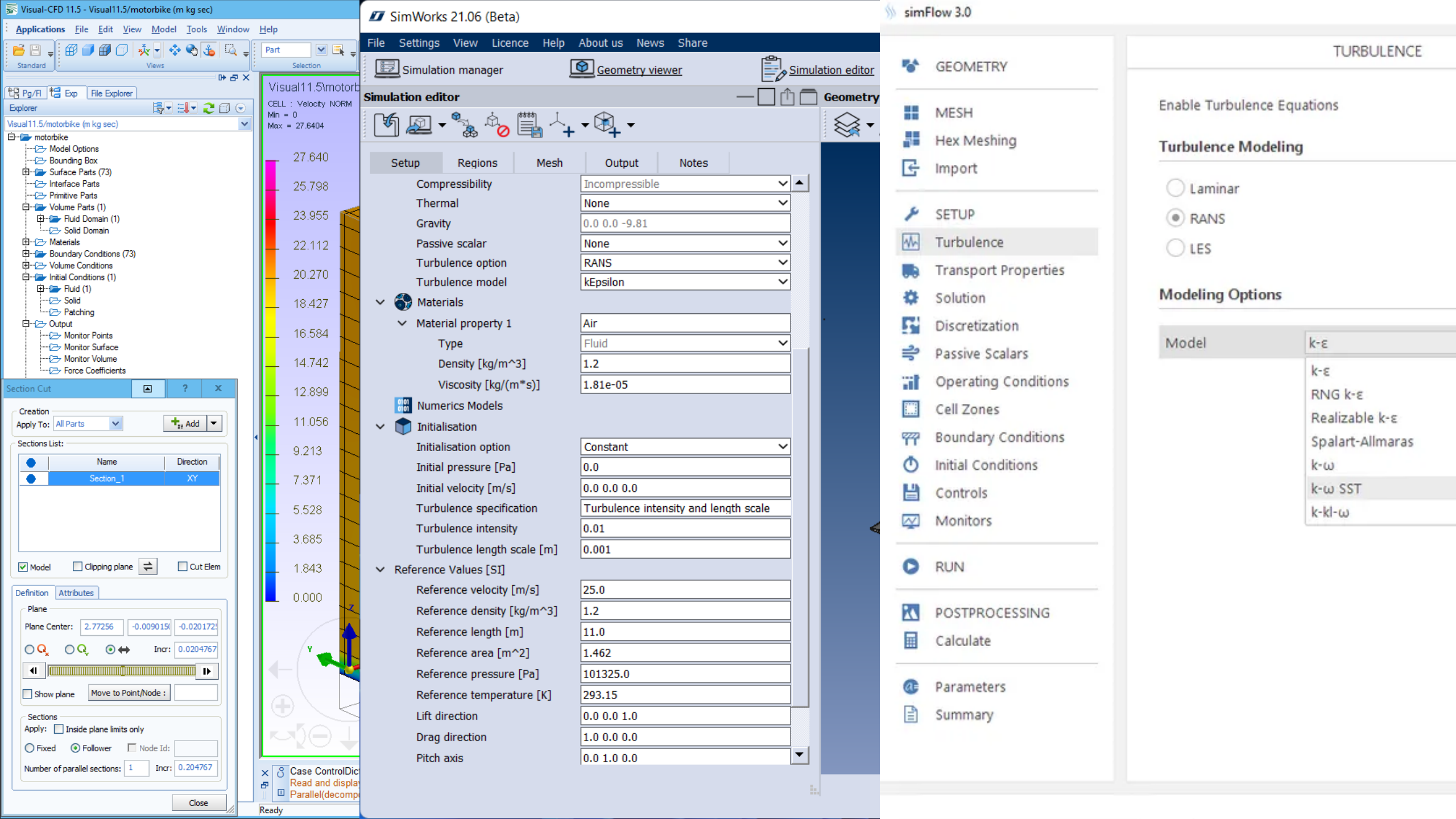


Why GUI (Graphical User Interface) ?

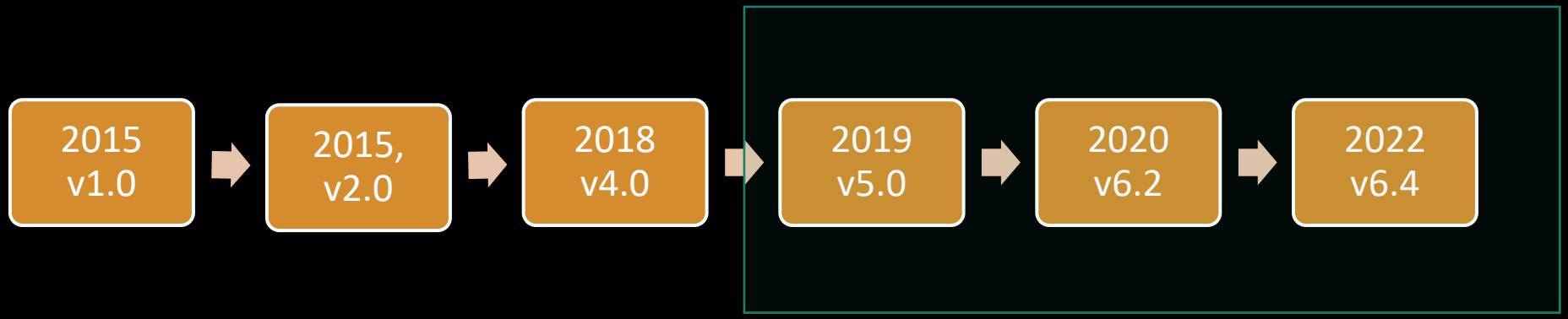




Alternatives?


Visual-CFD 11.5 - Visual11.5/motorbike (m kg sec)
Applications File Edit View Model Tools Window Help
Visual11.5/motorbike (m kg sec)
motorbike
Model Options
Bounding Box
Surface Parts (73)
Interface Parts
Primitive Parts
Volume Parts (1)
Fluid Domain (1)
Solid Domain
Materials
Boundary Conditions (73)
Volume Conditions
Initial Conditions (1)
Fluid (1)
Solid
Patching
Output
Monitor Points
Monitor Surface
Monitor Volume
Force Coefficients
Section Cut
Creation
Apply To: All Parts
Add
Sections List:
Name
Direction
Section_1
XY
Model
Clipping plane
Cut Elem
Definition
Attributes
Plane
Plane Center:
Incr:
Show plane
Move to Point/Node :
Sections
Apply:
Inside plane limits only
Fixed
Follower
Node Id:
Number of parallel sections:
Incr:
Close
Visual11.5\motorb
CELL : Velocity NORM
Min = 0
Max = 27.6404
27.640
25.798
23.955
22.112
20.270
18.427
16.584
14.742
12.899
11.056
9.213
7.371
5.528
3.685
1.843
0.000
Case ControlDict
Read and displa
Parallel(decomp
Ready
SimWorks 21.06 (Beta)
File Settings View Licence Help About us News Share
Simulation manager
Geometry viewer
Simulation editor
Simulation editor
Geometry
Setup
Regions
Mesh
Output
Notes
Compressibility
Incompressible
Thermal
None
Gravity
0.0 0.0 -9.81
Passive scalar
None
Turbulence option
RANS
Turbulence model
kEpsilon
Materials
Material property 1
Air
Type
Fluid
Density [kg/m^3]
1.2
Viscosity [kg/(m*s)]
1.81e-05
Numerics Models
Initialisation
Initialisation option
Constant
Initial pressure [Pa]
0.0
Initial velocity [m/s]
0.0 0.0 0.0
Turbulence specification
Turbulence intensity and length scale
Turbulence intensity
0.01
Turbulence length scale [m]
0.001
Reference Values [SI]
Reference velocity [m/s]
25.0
Reference density [kg/m^3]
1.2
Reference length [m]
11.0
Reference area [m^2]
1.462
Reference pressure [Pa]
101325.0
Reference temperature [K]
293.15
Lift direction
0.0 0.0 1.0
Drag direction
1.0 0.0 0.0
Pitch axis
0.0 1.0 0.0
simFlow 3.0
GEOMETRY
MESH
Hex Meshing
Import
SETUP
Turbulence
Transport Properties
Solution
Discretization
Passive Scalars
Operating Conditions
Cell Zones
Boundary Conditions
Initial Conditions
Controls
Monitors
RUN
POSTPROCESSING
Calculate
Parameters
Summary
TURBULENCE
Enable Turbulence Equations
Turbulence Modeling
Laminar
RANS
LES
Modeling Options
Model
k-ε
k-ε
RNG k-ε
Realizable k-ε
Spalart-Allmaras
k-ω
k-ω SST
k-kl-ω

BARAM Revised



From v5, Start to focus on CFD users than developers

Downloads
3,033
2020-12-27 to 2022-09-18

Countries

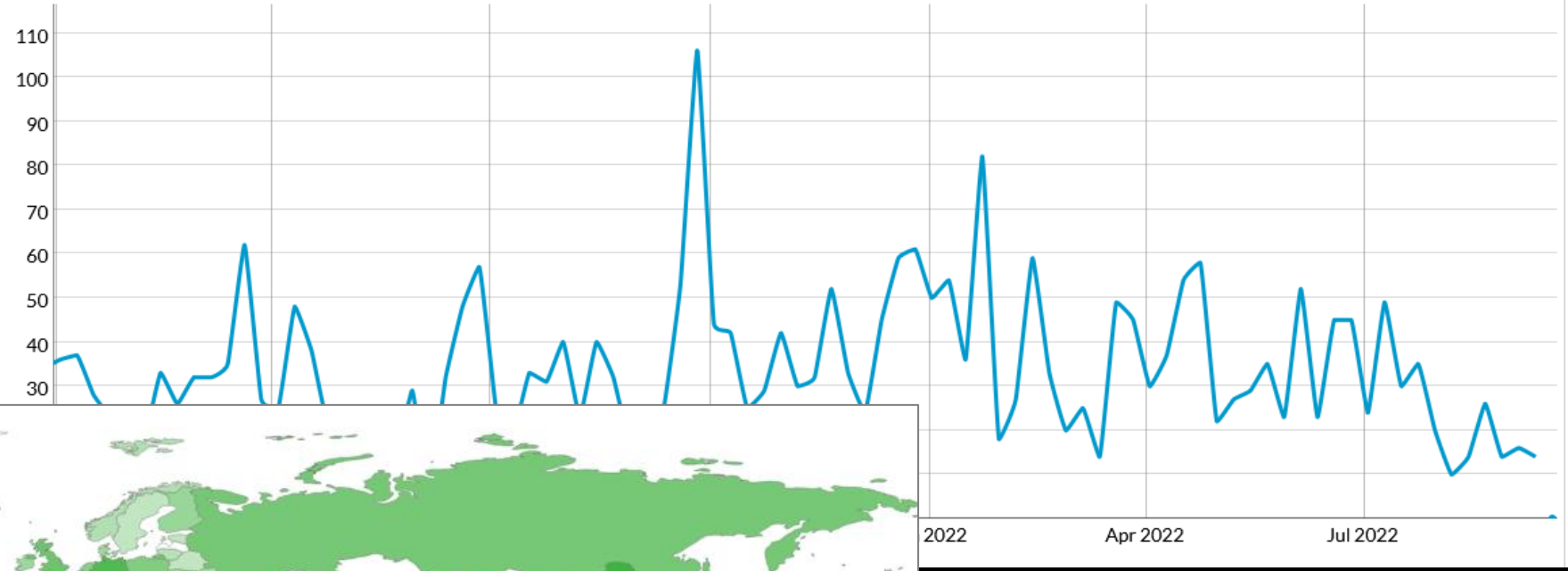
Operating Systems

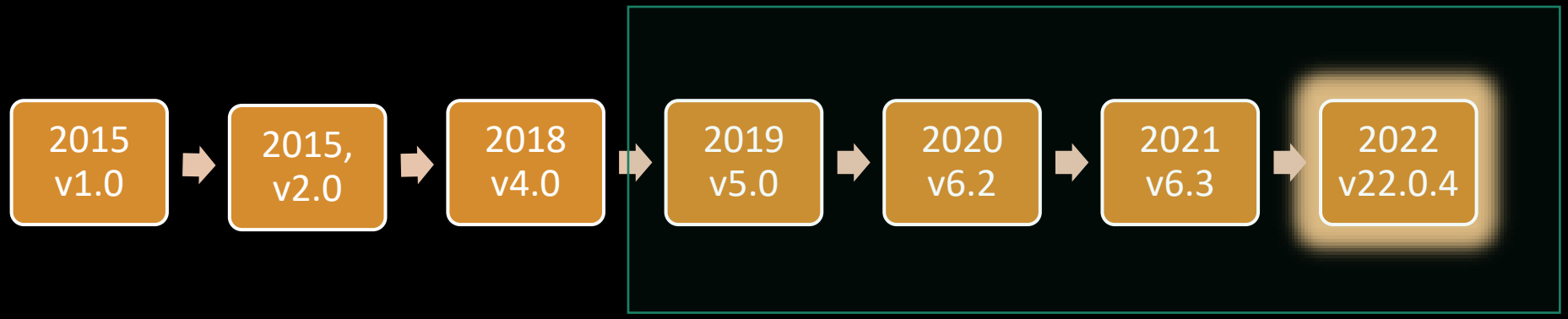
Download Statistics

All Files (Change File)

Date Range: 2020-12-27 to 2022-09-18

Daily | Weekly | Monthly





From v22, To a CFD Application from OpenFOAM GUI

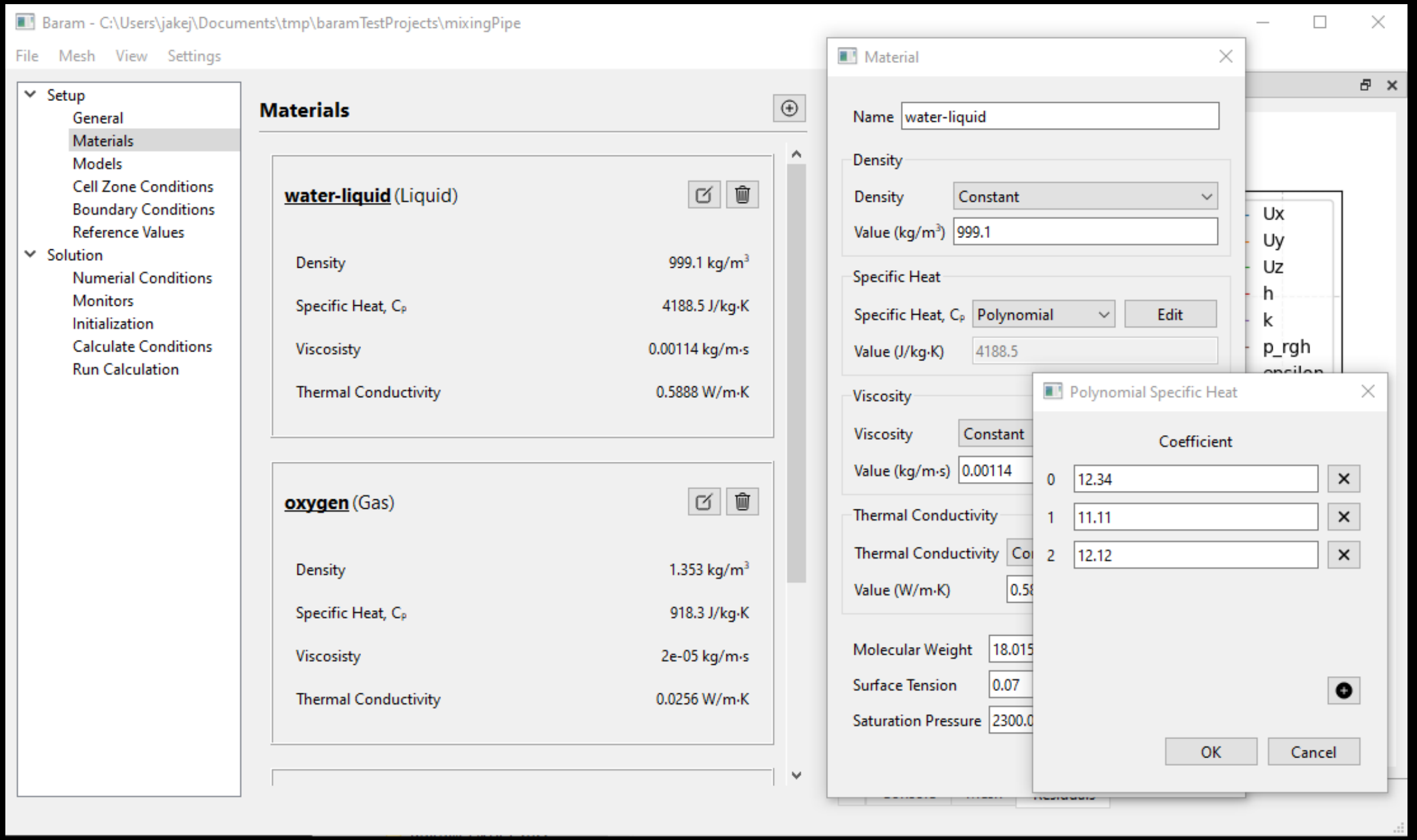
- Rebuilt from the Ground up for Stability
- User-friendly convenient UI
- multi-platform support
- easy installation
- Performance improvement

Overview

- Python 3.9
- VTK 9.1
- PySide6 (QT6 for Python)
- OpenFOAM N1.0 (based on *nextFoam6* and *OFv2206*)

- Ubuntu 20.04 or later
- CentOS 8.2 or later
- Windows 10 or later
- macOS 10.14 or later

Screenshots


Baram - C:\Users\jakej\Documents\tmp\baramTestProjects\mixingPipe
File
Mesh
View
Settings
Setup
General
Materials
Models
Cell Zone Conditions
Boundary Conditions
Reference Values
Solution
Numerial Conditions
Monitors
Initialization
Calculate Conditions
Run Calculation
Materials
water-liquid (Liquid)
Density 999.1 kg/m3
Specific Heat, Cp 4188.5 J/kg·K
Viscosity 0.00114 kg/m·s
Thermal Conductivity 0.5888 W/m·K
oxygen (Gas)
Density 1.353 kg/m3
Specific Heat, Cp 918.3 J/kg·K
Viscosity 2e-05 kg/m·s
Thermal Conductivity 0.0256 W/m·K
Material
Name water-liquid
Density
Density Constant
Value (kg/m3) 999.1
Specific Heat
Specific Heat, Cp Polynomial
Edit
Value (J/kg·K) 4188.5
Viscosity
Viscosity Constant
Value (kg/m·s) 0.00114
Thermal Conductivity
Thermal Conductivity
Value (W/m·K)
Molecular Weight 18.015
Surface Tension 0.07
Saturation Pressure 2300.0
Polynomial Specific Heat
Coefficient
0 12.34
1 11.11
2 12.12
OK
Cancel
Ux
Uy
Uz
h
k
p_rgh

Baram - C:\Users\jakej\Documents\tmp\baramTestProjects\mixingPipe

File Mesh View Settings

- Setup
  - General
  - Materials
  - Models
  - Cell Zone Conditions
  - Boundary Conditions
  - Reference Values
- Solution
  - Numerial Conditions
  - Monitors
  - Initialization
  - Calculate Conditions
  - Run Calculation

Boundary Conditions

filter string is here

region0

- **in-1** Velocit
- **in-2** Velocit
- **out** Pressu
- **wall** Wall

Inlet

- Velocity Inlet
- Flow Rate Inlet
- Pressure Inlet
- ABL Inlet
- Open Channle Inlet
- Free Stream
- Far-field Riemann
- Subsonic Inflow
- Supersonic Inflow

Outlet

- Pressure Outlet
- OpenChannel Outlet
- Outflow
- Subsonic Outflow
- Supersonic Outflow

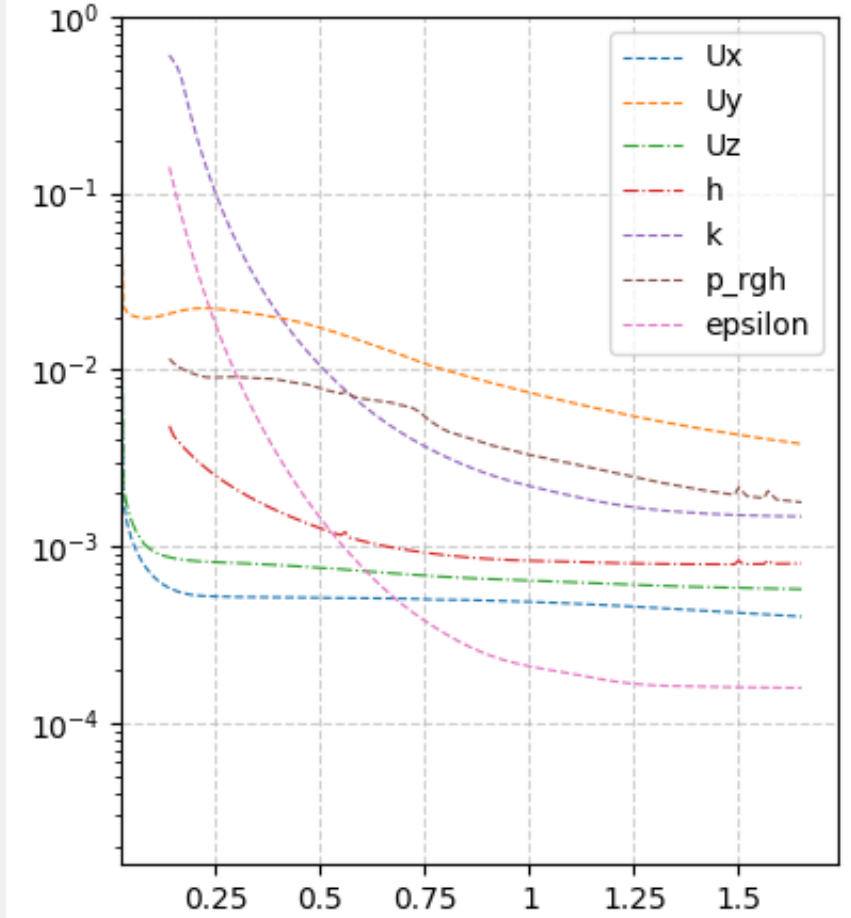
Wall

- Wall
- Thermo-Coupled Wall

Misc.

- Symmetry
- Interface
- Empty
- Cyclic
- Wedge
- Porous Jump
- FAN

Residuals



Console Mesh Residuals

Baram - C:\Users\jakej\Documents\tmp\baramTestProjects\mixingPipe

File Mesh View Settings

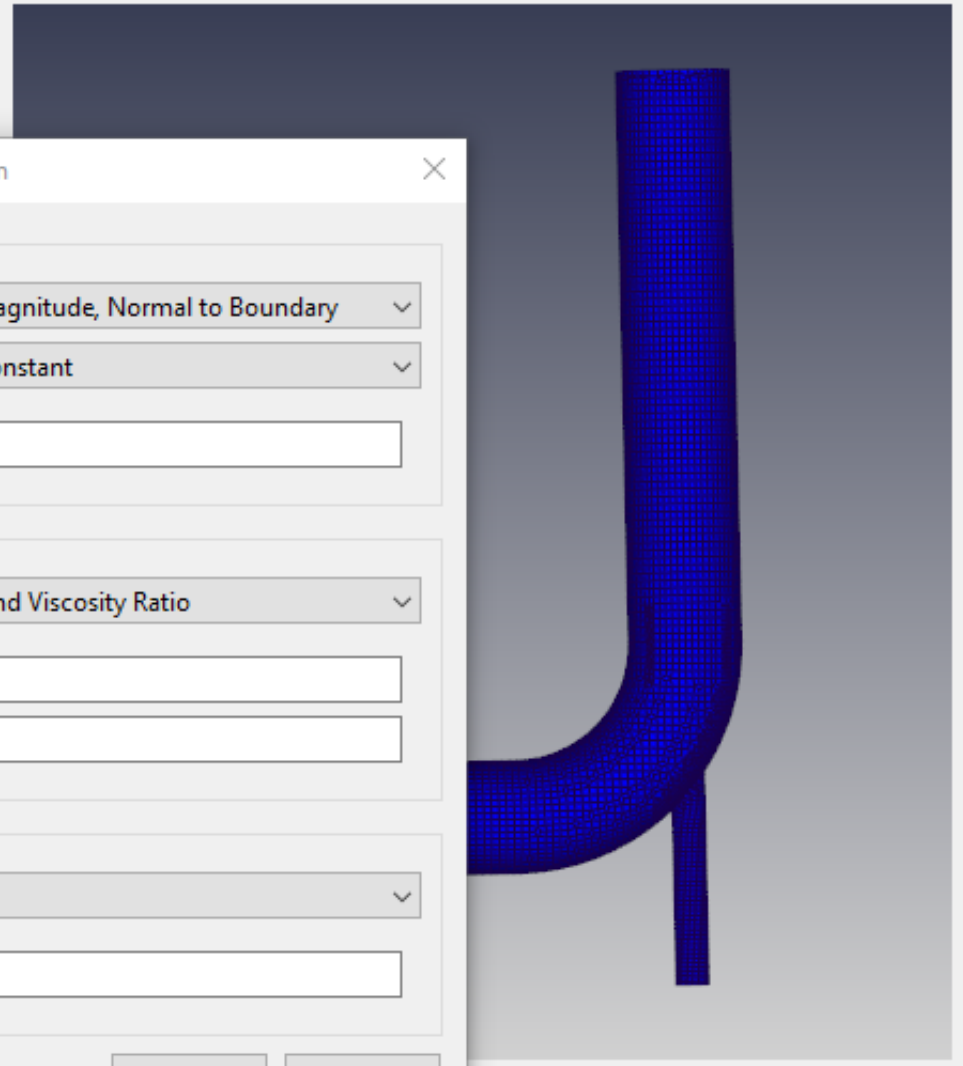
- Setup
  - General
  - Materials
  - Models
  - Cell Zone Conditions
  - Boundary Conditions
  - Reference Values
- Solution
  - Numerial Conditions
  - Monitors
  - Initialization
  - Calculate Conditions
  - Run Calculation

Boundary Conditions

filter string is here

- region0
  - **in-1** Velocity Inlet
  - **in-2** Velocity Inlet
  - **out** Pressure Outlet
  - **wall** Wall

Mesh



Velocity Inlet Boundary Condition

Velocity

Velocity Specification Method: Magnitude, Normal to Boundary

Profile Type: Constant

Velocity Magnitude (m/s): 2

Turbulence

Specification method: Intensity and Viscosity Ratio

Turbulent Intensity (%): 1

Turbulent Visocosity Ratio: 10

Temperature

Profile Type: Constant

Temperature (K): 310

OK Cancel

Baram - C:\Users\jakej\Documents\tmp\baramTestProjects\mixingPipe

File Mesh View Settings

- Setup
  - General
  - Materials
  - Models
  - Cell Zone Conditions
  - Boundary Conditions
  - Reference Values
- Solution
  - Numerial Conditions
  - Monitors
  - Initialization
  - Calculate Conditions
  - Run Calculation

Process Information

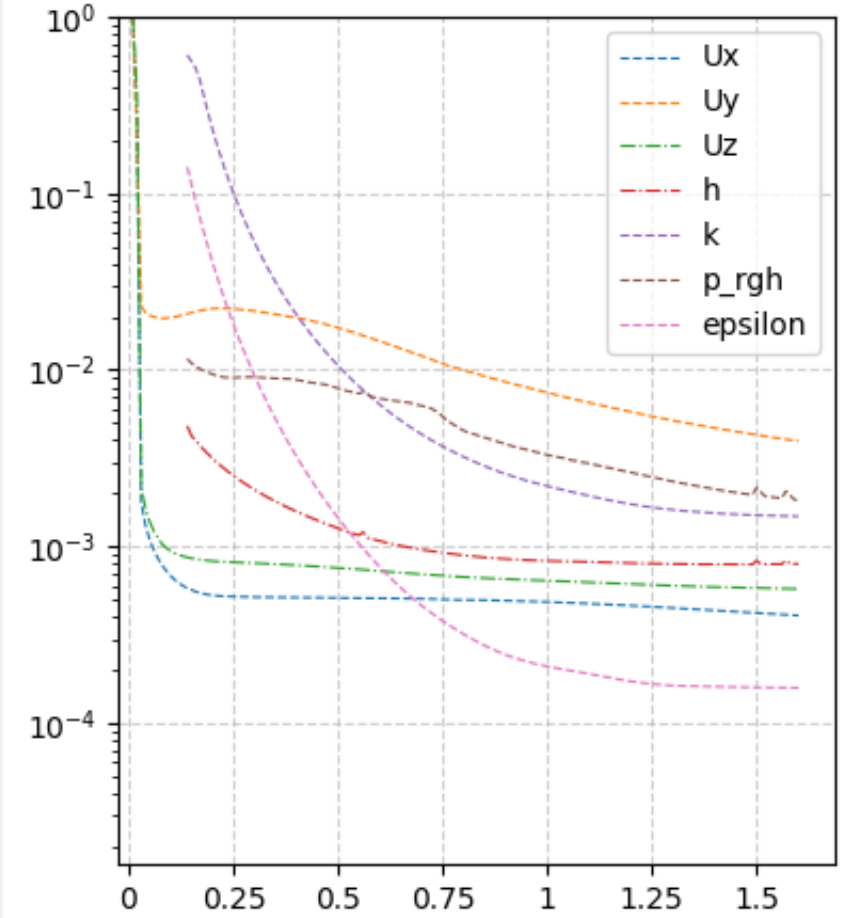
ID :	15580
Started :	2022-09-21, 10:59:22
Status :	Running

Cancel Calculation
Calculation stops as soon as possible

Save and Stop Calculation
(Calculation stops after finishing current iteration)

Update Configuration
(Applied to the Calculation on the fly)

Residuals



Console Mesh Residuals

Status, Roadmap

main | 4 branches | 1 tag | Go to file | Add file | Code

jiban Issue #132, "g" file should be under "constant" folder ev... 2143ab3 2 days ago 418 commits

.github/ISSUE_TEMPLATE	Update issue templates	13 days ago
.idea	Regarding Windows platform, entire solvers directory sho...	2 months ago
PyFoam	Issue #57 PyFoam could not handle a list that has length ...	last month
coredb	최근 읽은 Mesh 폴더를 저장하여 다시 읽을 때 이전 Mes...	6 days ago
gradle/wrapper	"gradle" will compile UI file.	6 months ago
misc	Issue #41 Tiny ANSI C utility that daemonizes a given pro...	last month
openfoam	Issue #132, "g" file should be under "constant" folder eve...	2 days ago
resources	Default Value changed by bykim	5 days ago
test	Feedback from bykim(alphat should be generated regardl...	5 days ago
view	Typo. Feedback from bykim	2 days ago
.gitignore	Regarding Windows platform, entire solvers directory sho...	2 months ago
INSTALL.md	Typo	7 days ago
LICENSE	Initial commit	6 months ago
README.md	Prepare for publishing	13 days ago
build.gradle	"gradle" will compile UI file.	6 months ago
convertUi.py	파일 찾는 함수 수정(convertUi.py, createTsFiles.py, create...	17 days ago
gradlew	this is executable file	3 months ago
gradlew.bat	"gradle" will compile UI file.	6 months ago
main.py	Issue #111, App exited when all windows are closed	22 days ago

About

No description, website, or topics provided.

Readme
GPL-3.0 license
0 stars
1 watching
0 forks

Releases

1 tags

Create a new release

Packages

No packages published
Publish your first package

Contributors 2

jiban Jake Yun
thisisHenney Henney Park

Languages

Python 99.9% C 0.1%

- Stready/Transient Case
- Cell Zones
  - Porous Zone
  - Sliding Mesh
  - Actuator Disk
  - Multiple Reference Frame (MRF)
- Turbulence models
  - K-Epsilon
  - K-Omega
  - Spalart-Allmaras
  - DES
  - LES

- Incompressible Flow
- Compressible Flow
- Buoyant Flow
- multi-phase (VOF, Cavitation)
- Radiation
- Species

Q & A

Talent

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