```
In [ ]: # This has to be executed at every time we run the docker image (could be automatized ?)
                      # sudo apt-get update && sudo apt-get install xvfb && pip install --user xvfbwrapper pyvista plotly panel
                      # ./tools/load xvfb.sh for plotting in docker term
                      import sys
                      import feelpp
                      import feelpp.toolboxes.core as tb
                      from tools.solvers import Poisson
                      # mandatory things
                      sys.argv = ["feelpp app"]
                      e = feelpp.Environment(sys.argv,
                                                                                     opts=tb.toolboxes options("coefficient-form-pdes", "cfpdes"),
                                                                                     config=feelpp.localRepository('feelpp_cfpde'))
                      # ------
                      # Poisson problem
                      \# - div (diff * grad (u)) = f in Omega
                                                                                 u = g in Gamma D
                      # Omega = domain, either cube or ball
                      # Approx = lagrange Pk of order order
                      # mesh of size h
                      # 2D with varying RHS
                      P = Poisson(dim = 2)
                      P(h=0.08, \quad rhs='-1.0-1*y*x+y*y', \ g='0', \ order=1, \ geofile='geo/disk.geo', \ plot='2d.png')
                      P(h=0.08, rhs='-1.0-1*y*x+y*y', g='0', order=1, geofile='geo/disk.geo', solver='scimba')
                      P(h=0.1, \quad rhs='-1.0-2*y*x+y*y', \;\; g='0', \;\; order=1, \;\; plot='f2.png')
                      P(h=0.1, rhs='-1.0-2*y*x+y*y', g='0', order=1, solver='scimba')
                      P(h=0.1, rhs='-1.0-3*y*x+y*y', g='y', order=1, plot='f3.png')
                      P(h=0.1, rhs='-1.0-3*y*x+y*y', g='y', order=1, solver='scimba')
                      P(h=0.05, rhs='1',
                                                                                                           g='0', order=1, plot='f5.png')
                      P(h=0.05, rhs='1 + x-x',
                                                                                                                            g='0', order=1, solver ='scimba')
                      # # 2D with varying anisotropy
                      #P = Poisson(dim = 2)
                      P(h=0.1, diff='{1.0,0,0,x*y}', rhs='1', plot='d1.png')
                      P(h=0.1, diff='(1+x,0,0,1+y)', rhs='1+ x-x', solver='scimba')
                      P(h=0.1, diff='{x,y,-y,x+y}', rhs='1', plot='d3.png')
P(h=0.1, diff='(x,y,-y,x+y)', rhs='1+ x-x', solver='scimba')
                      # 3D with varying anisotropy and non-homogeneous Dirichlet BC
                      #P = Poisson(dim = 3)
                      \#P(h=0.08, diff='\{1,0,0,0,0,x+1,0,0,0,1+x*y\}', g='x', rhs='x*y*z', geofile='geo/cube.geo', plot='3d.png') \#air files for the substitution of the
                      # ce qu'on voudrait
                      # 1 pouvoir résoudre dans scimba juste en changeant le flag "solver"
                      \#P(h=0.08,\ diff='\{1,0,0,0,0,x+1,0,0,0,1+x*y\}',\ g='x',\ rhs='x*y*z',\ geofile='geo/cube.geo',\ plot='3d.png',\ solution for the substitution of the substitution of
                      # pouvoir rcupérer le mesh et les dofs en sortie de P(...)
                      #mean
                      pour scimba
                      \# eval(' ') rhs = x1
                      f = eval(rhs)
                      rhs.replace('x','x1')
                      \#mesh, dofs = P(...)...
                      #utiliser diff sur scimba dx^*()+dy(+dz) cas matrice cte
```

Using device: cpu torch loaded; device is cpu Solving the laplacian problem for hsize = 0.08...

loadMesh] Use default geo desc: /workspaces/2024-m1-scimba-feelpp/geo/disk.geo 0.08	
Toolbox::cfpdes-2d-p1 - Use Case Study	
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Environment	1
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prefix : cfpdes	1
keyword : cfpdes-2d-p1	1
root repository : /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1	1
number of processus : 1	I
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Materials Properties	
+	
number of materials : 1	
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++	
Meshes	
+	
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Mesh : cfpdes-2d-p1	
+	
Discretization : /Mesh/object-1	
+	
Import configuration	
+	
geo-filename :	
hsize : 1.000000e-01	
generate-partitioning : 0	
+	
+	
+	
dim : 2	
h_average : 1.012276e-01	
h_max : 1.349240e-01	
h_min : 8.067356e-02	
n_elements : 757	

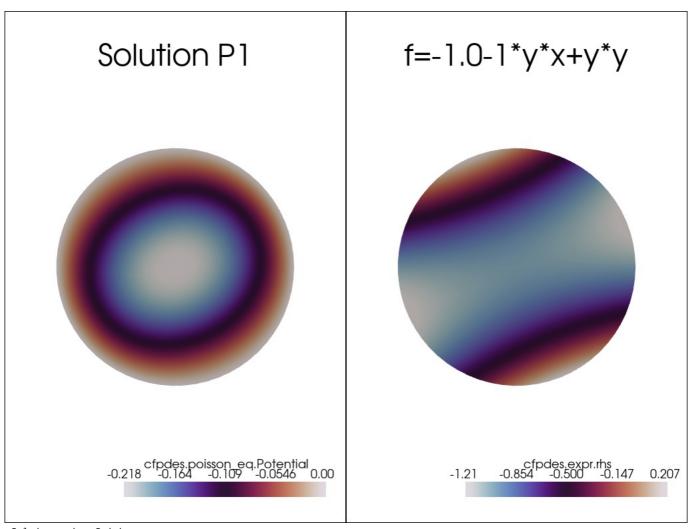
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| | | | real_dim : 2 |
                      | | | | shape : Simplex_2_1_2 |
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                      | Algebraic Solver
| +-----
| | Backend |
| | +----+
| | prefix : cfpdes |
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| +------
| +------
| | atol : 1.000000e-50 | |
       : 1.000000e+05 | |
| | dtol
| | maxit : 1000
| | reuse-prec : 0
| | rtol
       : 1.000000e-08 | |
: gmres | |
| | atol : 1.000000e-50 | |
|| maxit : 50 | |
| | rtol : 1.000000e-08 | |
|| stol
      : 1.000000e-08 | |
| +-----
| | +------
|  |  | KSP in SNES
| +-----
| | maxit : 1000 | |
| | | rtol : 1.000000e-05 | |
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 mat-solver-package : mumps	
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Toolbox Coefficient Form PDE : poisson_eq	
 	
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prefix : cfpdes.poisson_eq	l
keyword : poisson_eq	1
root repository : /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np	_1
number of processus : 1 	
+ Physics	
poisson_eq	
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modeling : GenericPDE	
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Name Expression Symbol Shape C	
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c {1,0,0,1} physics_poisson_eq_c tensor2 [2x2] +	
Indices	Symbol
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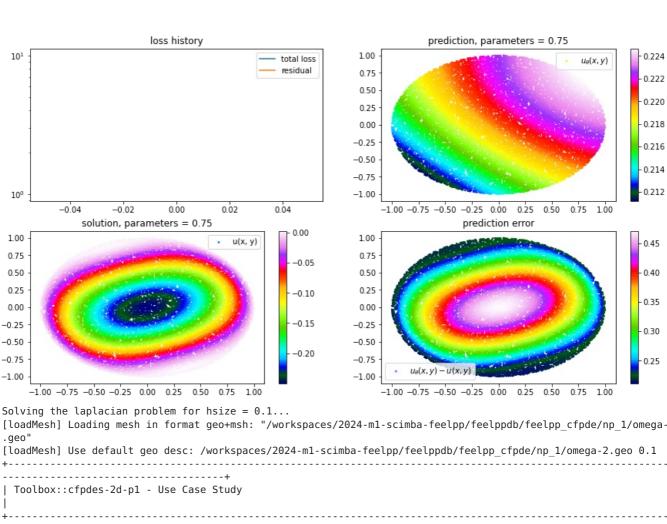
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	 	1.1	n_elements	: 757		1			
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	. ' '	1 1	n_partition						
	. ! '	1 1							
	 	1 1	n_points						
	 	1	order	: 1					
 	 	П	real_dim	: 2			1.1		
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Boundary Conditions	·
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expr : 0	1 1
markers : Gamma_D	
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Function Spaces	1
+	+
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Potential	11
+	+
mesh : /Mesh/object-1	
nSpace : 1	
+	-+
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is_continuous : 1	
nComponents : 1	
nComponents1 : 1	
nComponents2 : 1	111
nLocalDof : 3	111
name : lagrange	111
order : 1	111
shape : scalar	111
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	+
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Potential	LI
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base symbol : u	1.1
function space : /FunctionSpace/object-0	1.1
name : Potential	1.1
prefix symbol : poisson_eq	LL
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Potential_previous	LL
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base symbol : u_previous	1.1
function space : /FunctionSpace/object-0	LL
name : Potential_previous	LL
prefix symbol : poisson_eq	1.1
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Potential_remove_trial	LI
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base symbol : u_rt	LI
function space : /FunctionSpace/object-0	1.1
name : Potential_remove_trial	1.1
prefix symbol : poisson_eq	1.1
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Solving using Scimba >> load network /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1/networks/test.pth network was not loaded from file: training needed



[loadMesh] Loading mesh in format geo+msh: "/workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp cfpde/np 1/omega-2 .geo"

| Environment prefix : cfpdes : cfpdes-2d-p1 keyword : /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1 root repository

number of processus : 1

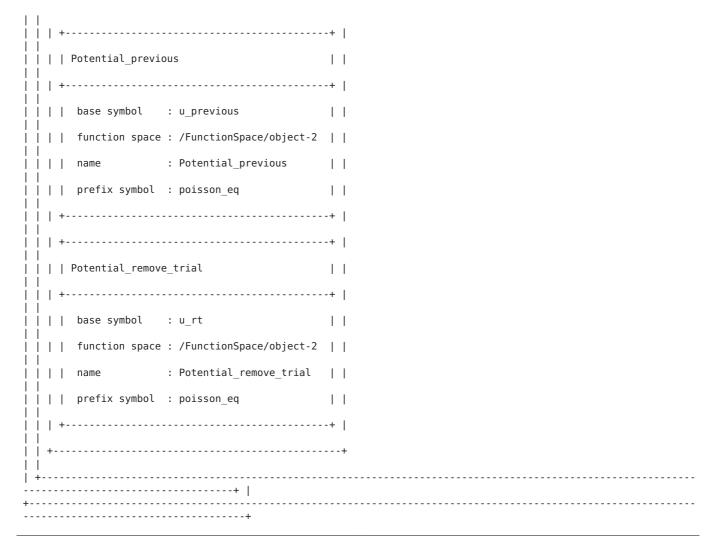
```
| | Materials Properties |
\mid \; \mid \; number of materials : 1 \mid \; \mid
+----+
| | Meshes
| +-----+ |
| | Mesh : cfpdes-2d-p1
| +------
| | Discretization : /Mesh/object-3
| | +-----+ | |
|  |  | Import configuration
                    | | | geo-filename
: 1.000000e-01 | | |
| | | generate-partitioning : 0
| | +-----+ | |
| | | +-----+
| \cdot |
| | +-----+
                      | | | | dim : 2
                      | | h_max : 1.168628e-01 |
                      | | | h_min : 8.366122e-02 |
                      | \cdot |
| | | | n_points : 145
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                      | +------
| Algebraic Solver
| +----+
| | Backend |
| +-----
| | | prefix : cfpdes |
```

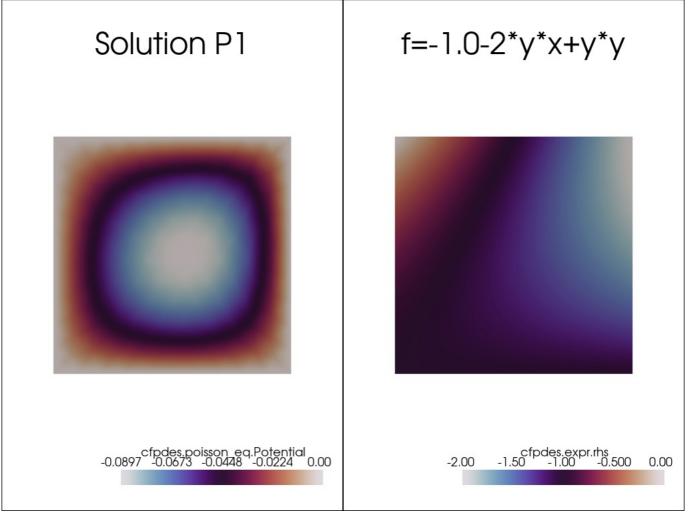
```
| | +-----+ |
: 1.000000e-50 | |
| | dtol : 1.000000e+05 | |
| | maxit : 1000 | |
| | rtol : 1.000000e-08 | |
: gmres | |
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| | SNES
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| | atol : 1.000000e-50 | |
| | maxit : 50
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| | rtol : 1.000000e-08 | |
| | stol : 1.000000e-08 | |
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| | KSP in SNES
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| | maxit : 1000
              | | reuse-prec : 0
| | rtol : 1.000000e-05 | |
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| | | mat-solver-package : mumps | |
: lu | |
|  | Toolbox Coefficient Form PDE : poisson eq
```

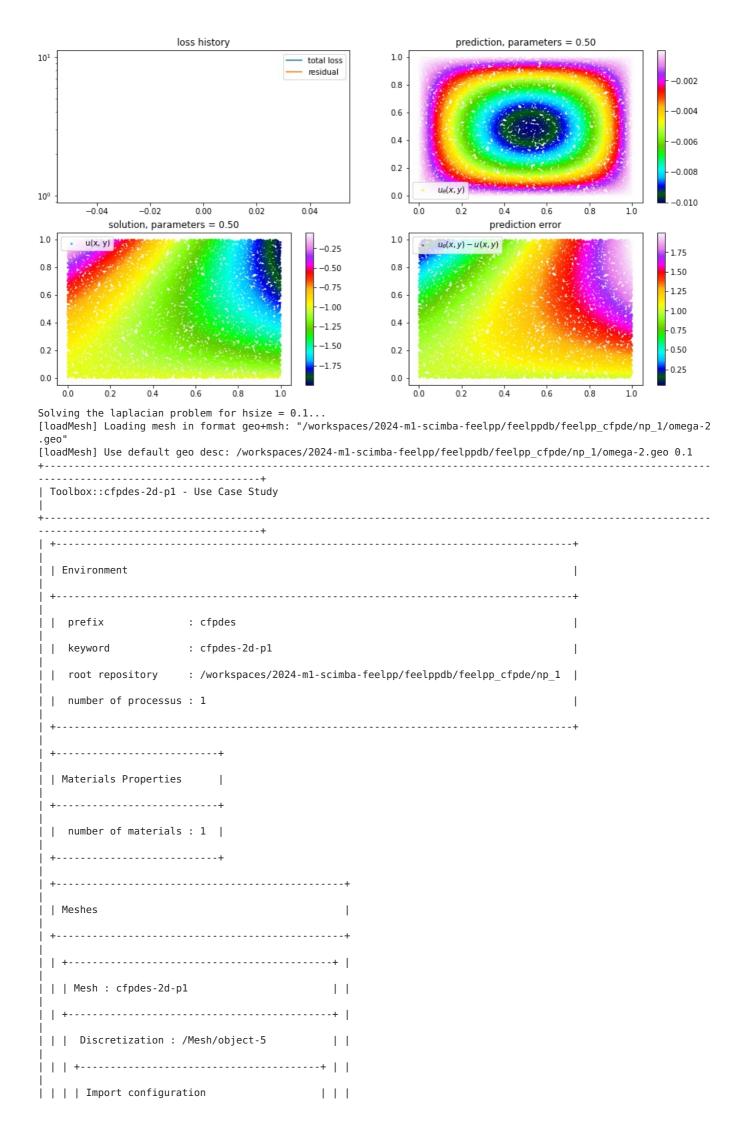
prefix	: cfpdes.poisson_eq		
keyword	: poisson_eq		I
root repository	: /workspaces/2024-m1-scimba-feelpp/fee	lppdb/feelpp_cfpde/n	p_1
number of processus	5 : 1		I
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Physics	·		
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name : pois			
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Indices		1	+=====
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sson_eq_c_01 0,1		1	+
		1	physics_poisson_eq_poi
sson_eq_c_10 1,0		1	+
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	: 1.168628e-01	I	
	: 8.366122e-02	1	
n_elements	: 248	I	
n_faces	: 392	I	
n_partition	: 1	I	
	: 145	I	
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Boundary Condition			
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| | | | nComponents : 1
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             | | | | | nLocalDof : 3
             : lagrange | | |
| | | | order
        : 1
             : scalar | | |
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| | | | | nDof : 145 |
| | | base symbol : u
| | | | function space : /FunctionSpace/object-2 | |
     : Potential
                  | | | | prefix symbol : poisson_eq
```







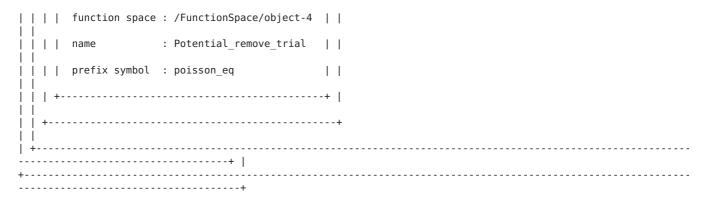
```
| | | | geo-filename
         : 1.000000e-01 | | |
| | | | hsize
| | | | generate-partitioning : 0
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| | |
| | +-----+
| | | dim : 2
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| \cdot |
| | | h_max : 1.168628e-01 |
                    | | | | h_min : 8.366122e-02 |
                    1
                    | |
| | | n_partition : 1
                     | \cdot |
| | | | n_points : 145 |
                     | | | order : 1
               1.1
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| Algebraic Solver
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| | | Backend |
| | +----+
| | | prefix : cfpdes |
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| | +------
| | atol : 1.000000e-50 | |
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: 1000 | |
| | | reuse-prec : 0
             | | | rtol : 1.000000e-08 | |
| | type : gmres | |
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```

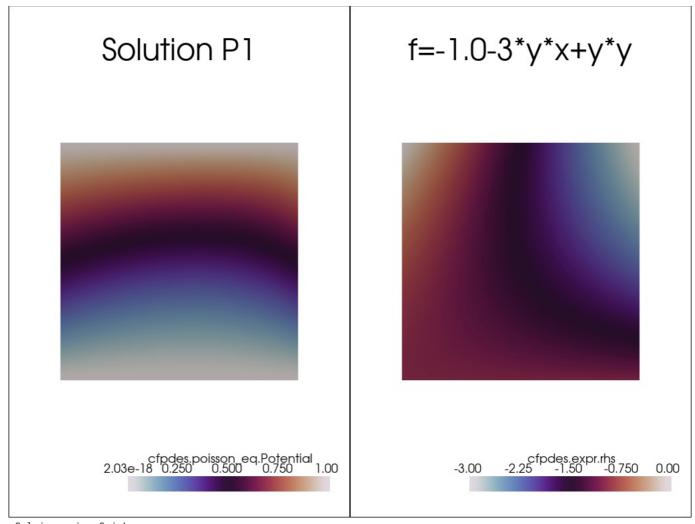
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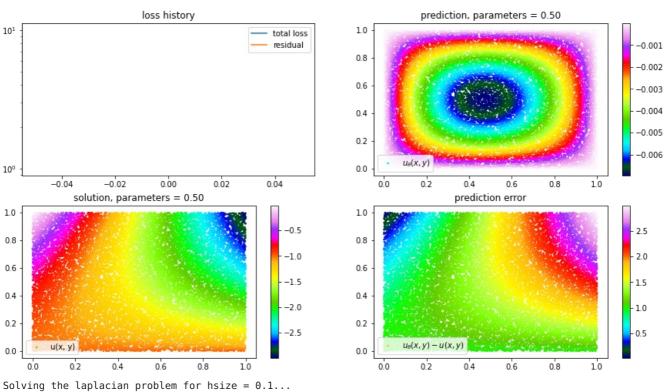
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: lagrange | | |
: 1 | | |
| | | | | order
: scalar |||
| | | +-----+ | |
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| | +-----
| | | | | nDof : 145 |
               | | | Potential
                   | | | | base symbol : u
| | | | function space : /FunctionSpace/object-4 | |
| | | name : Potential
                   | | | prefix symbol : poisson_eq
| | | +-----+ |
| | | | base symbol : u_previous
| | | | function space : /FunctionSpace/object-4 | |
| | | name : Potential_previous | |
| | | | prefix symbol : poisson_eq
| | | base symbol : u_rt
                   | \cdot |
```





Solving using Scimba

>> load network /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1/networks/test.pth network was not loaded from file: training needed



[loadMesh] Loading mesh in format geo+msh: "/workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1/omega-2.geo"

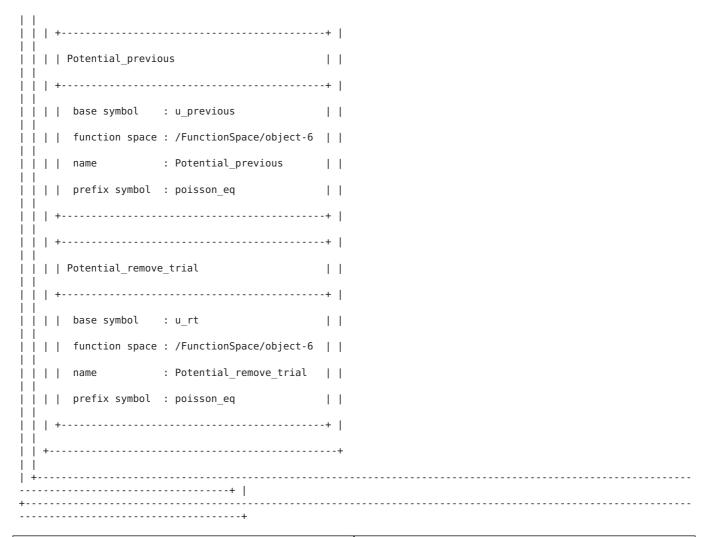
```
| | Materials Properties |
\mid \; \mid \; number of materials : 1 \mid \; \mid
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| | Meshes
| +-----+ |
| | Mesh : cfpdes-2d-p1
| +------
| | Discretization : /Mesh/object-7
| | +-----+ | |
|  |  | Import configuration
                    | | | geo-filename
: 1.000000e-01 | | |
| | | generate-partitioning : 0
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| | | +-----+
| \cdot |
| | +-----+
                      | | | | dim : 2
                      | | h_max : 1.168628e-01 |
                      | | | h_min : 8.366122e-02 |
                      | \cdot |
| | | | n_points : 145
                | \cdot |
: 1
                      | +------
| Algebraic Solver
| +----+
| | Backend |
| +-----
| | | prefix : cfpdes |
```

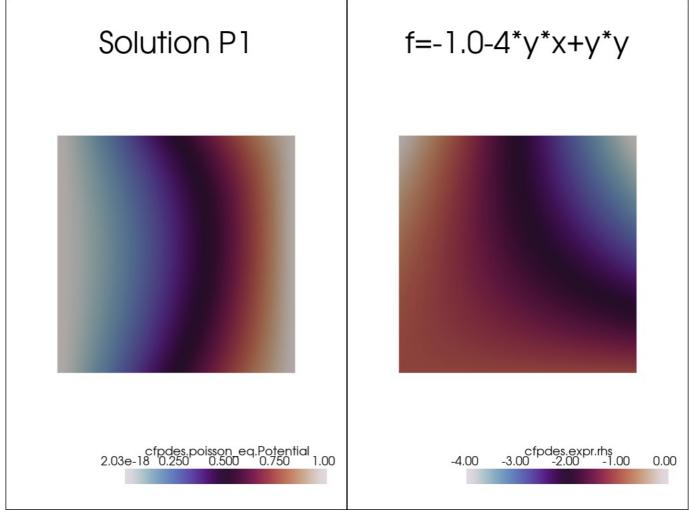
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| | dtol : 1.000000e+05 | |
| | maxit : 1000 | |
| | rtol : 1.000000e-08 | |
: gmres | |
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| | SNES
| +-----
| | atol : 1.000000e-50 | |
| | maxit : 50
| | reuse-jac : 0
| | rtol : 1.000000e-08 | |
| | stol : 1.000000e-08 | |
+------
| | KSP in SNES
| +------
| | maxit : 1000
              | | reuse-prec : 0
| | rtol : 1.000000e-05 | |
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| | | mat-solver-package : mumps | |
: lu | |
|  | Toolbox Coefficient Form PDE : poisson eq
```

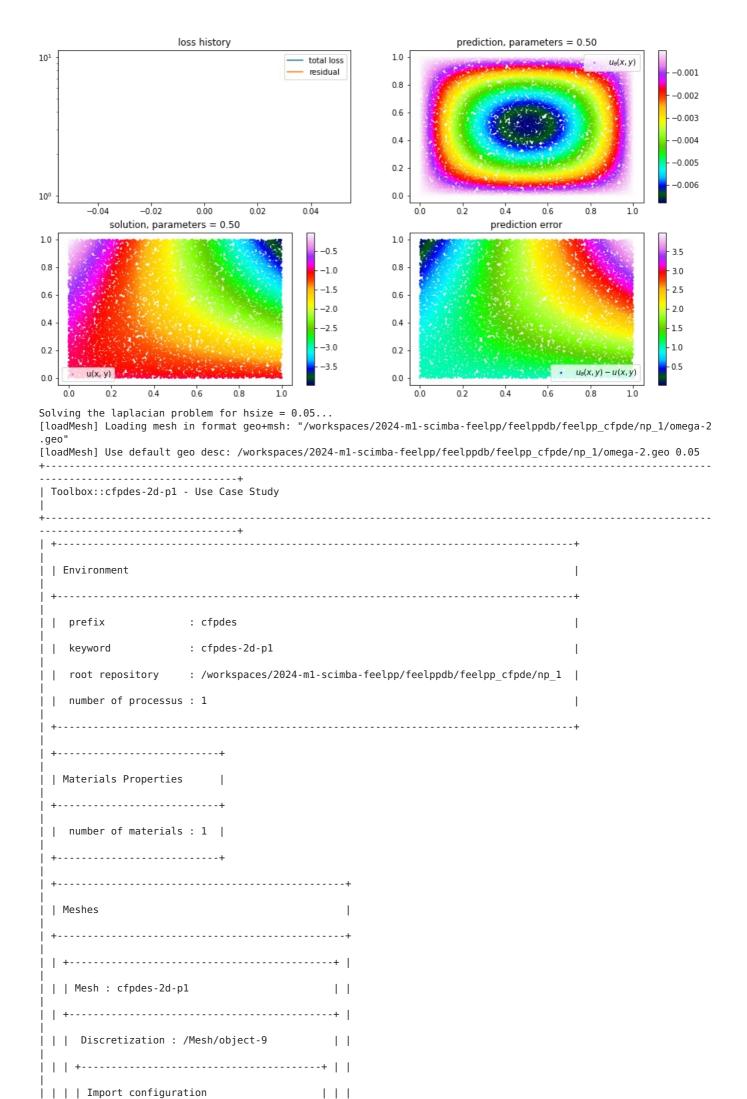
prefix : cfpdes.poiss	son_eq		1
keyword : poisson_eq			1
root repository : /workspaces/	/2024-m1-scimba-feelpp/feelppdb/fe	eelpp_cfpde/np_1	1
number of processus : 1			1
			-+
+			
+			
+			
	+	+	
Name Expression Sym	nbol SI	hape Co	nponents
		=====+===	
c {1,0,0,1} phy	vsics_poisson_eq_poisson_eq_c te	ensor2 [2x2] +-	
	1	1.1	Symbol
	1	+=	
=======++++++++++++++++++++++++++++++++	1	1.1	ohysics_poisson_eq_poi
sson_eq_c_00 0,0	1	+-	
	Í	1.1	ohysics_poisson_eq_poi
sson_eq_c_01 0,1	1	+-	
	1	1.1	ohysics_poisson_eq_poi
sson_eq_c_10 1,0	1	+-	
	1	1.1	ohysics_poisson_eq_poi
sson_eq_c_11 1,1	I	+-	
	+	· +	
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	vsics poisson ea poisson ea f so	calar I	
	/sics_poisson_eq_poisson_eq_f so		
	+	+	
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'				
	poisson_ed			
		/Mesh/obj		
' '	t configur			
				+
	filename	:		1
			1.000000e-	01
		itioning :		1
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	etization		I	
+			+	
	:	2	1	
	erage :	1.018751e-	01	
	x :	1.168628e-	01	
	n :	8.366122e-	02	
	ements :	248	1	
	ces :	392	1	
	rtition :	1	1	
	ints :	145	1	
orde	r :	1	1	
real	_dim :	2	1	
shap	e :	Simplex_2_	_1_2	
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+				
			+	
Boundary			ļ	
			+	
Dirichl				
			•	
ı ı -			1 1	

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| | | +-----+ |
| | | | Potential
| | | +-----+ | |
| \cdot |
| | | +------ | |
| | | | nComponents : 1
            | | | | nComponents1 : 1
            : lagrange | | |
| | | | order
        : 1
            : scalar | | |
| | | +-----+ | |
| | | +-----
| | | +-----+
| | | | | nDof : 145 |
| | | base symbol : u
| | | | function space : /FunctionSpace/object-6 | |
     : Potential
                 | | | | prefix symbol : poisson_eq
```







```
| | | | geo-filename
        : 1.000000e-01 | | |
| | | | hsize
| | | | generate-partitioning : 0
| | | +-----+
1.1
| | +-----+
| | | dim : 2
                   1.1
| \cdot |
| | | h_max : 6.887751e-02 |
                    | | | h_min : 4.286120e-02 |
                   | |
| \cdot |
| | | | n_points : 517 |
                    | | | order : 1
              1.1
| | +-----+
                   +----+
| Algebraic Solver
+----+
| | +-----
| | | Backend |
| | +----+
| | | prefix : cfpdes |
| +----+
| | +------
| | atol : 1.000000e-50 | |
| | | dtol : 1.000000e+05 | |
: 1000 | |
| | | reuse-prec : 0
             | | | rtol : 1.000000e-08 | |
| | type : gmres | |
| +------
```

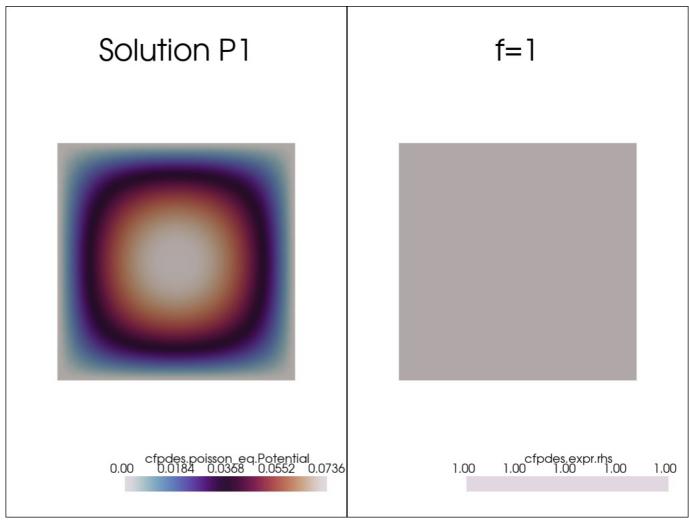
į		+	
	ı	SNES	
	I	+	
ĺ	I	atol : 1.000000e-50	
į	I	maxit : 50	
į	I	reuse-jac : 0	
ļ	I	rtol : 1.000000e-08	
	I	stol : 1.000000e-08	
	ı	+	
	ı	+	
į	· 1	KSP in SNES	
į	-	+	
į		·	
ļ		maxit : 1000	
		reuse-prec : 0	
		rtol : 1.000000e-05	
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į		+	
ļ	1	mat-solver-package : mumps	
	1	type	
 	I	+	
	+-	+	
	+-		
- -	 	+ Toolbox Coefficient Form PDE : poisson_eq	
į	į +-	· – ·	
-		+ +	
		Environment	
 		+	+
		prefix : cfpdes.poisson_eq	
ĺ	İ	keyword : poisson_eq	I
į	į	root repository : /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1	I
į		number of processus : 1	I
		+	+
		+	
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- - -	 		
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- -	 		
- 1	- 1	I I I noisson ag	

	+						
	type : poisson_eq						
		I					
	Parameters	I					
	+	 I					
	++	.' 	·	·			
		•	Shape	Components			
i i							
	c {1,0,0,1}	physics_poisson_eq_poisson_eq_c	tensor2 [2x2]	+			
				Symbol			
i ===		1		+======================================			
 ec		· 1		physics_poisson_eq_poisson			
		' !		+			
 ec		' !		physics_poisson_eq_poisson			
Ī				+			
		' !		physics_poisson_eq_poisson			
		' !		+			
		<u>'</u> !	l	physics_poisson_eq_poisson			
	 	<u>'</u> !	l	+			
	++	 	·	+			
	f 1	physics_poisson_eq_poisson_eq_f	scalar				
			·	+			
	+						
	+						
	++						
	++						
		+					
	Meshes	1					
	Mesh : poisson_eq	1.1					
	Discretization : /Mesh/d						
	+						
	Import configuration	1.1.1					
	generate-partitioning	: 0					
' '							

```
| | | | Discretization
                      - 1 1
                      ||||dim:2
                      | | | | h_average : 5.095217e-02 |
                      | | | | h_max : 6.887751e-02 |
                       | | | | h_min : 4.286120e-02 |
                      | | | | | n_elements : 952
                 1.1
| | | | | n_faces : 1468
                 | | | | n_points : 517
                 | | | | order : 1
                 | | | | | real_dim : 2
                 | | | | | shape : Simplex_2_1_2 |
                      1.1
                      | | +-----
| | | Boundary Conditions |
| | | Dirichlet
| | | +------ | |
| | | | | expr : 0 | | |
| | +-----+
|  |  | Function Spaces
| | | +------
| | | mesh : /Mesh/object-9 | |
| | | +----+ | |
```

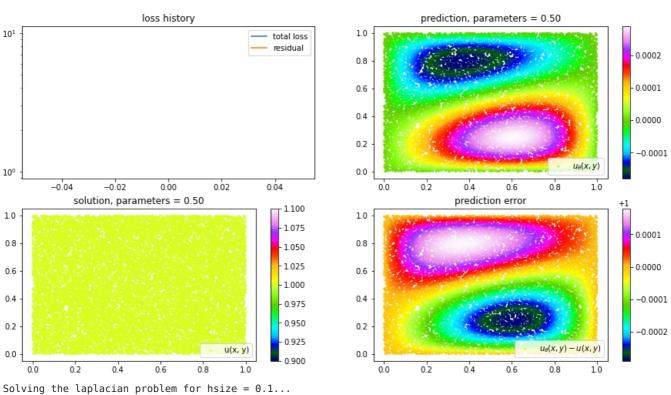
```
| \cdot |
111
: lagrange | | |
: 1 | | |
| | | | | order
: scalar |||
| | | +-----+ | |
1.1
| | +-----
| | | | | nDof : 517 |
              | | | Potential
                   | | | | function space : /FunctionSpace/object-8 | |
| | | name : Potential
                   | | | prefix symbol : poisson_eq
| | | +-----+ |
| | | | base symbol : u_previous
| | | | function space : /FunctionSpace/object-8 | |
| | | name : Potential_previous | |
| | | | prefix symbol : poisson_eq
| | | +-----+ |
| | | base symbol : u_rt
                   | \cdot |
```

		function space	: /FunctionSpace/object-8				
ļ		name	: Potential_remove_trial				
	 	nmafiv avmbal					
		prefix symbol	: poisson_eq				
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Solving using Scimba

>> load network /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1/networks/test.pth network was not loaded from file: training needed



[loadMesh] Loading mesh in format geo+msh: "/workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1/omega-2 .geo"

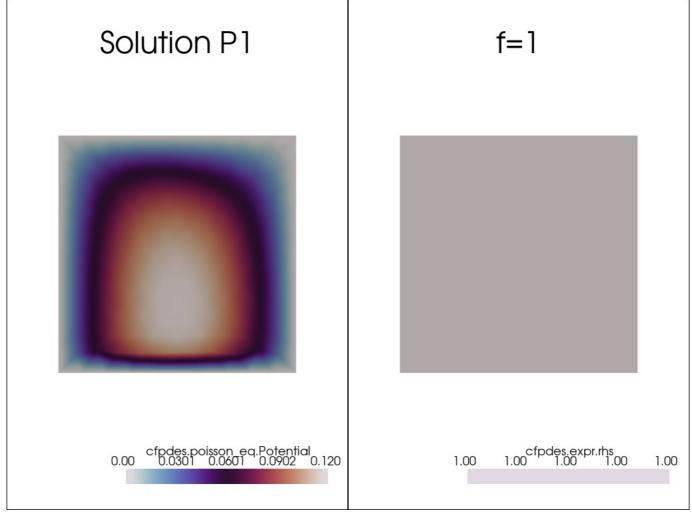
```
| | Materials Properties |
| | number of materials : 1 |
+----+
| | Meshes
| +-----+ |
| | Mesh : cfpdes-2d-p1
| +------
| | Discretization : /Mesh/object-11
| | +-----+ | |
| | | geo-filename
: 1.000000e-01 | | |
| | | generate-partitioning : 0
| | +-----+ | |
| | | +-----+
| \cdot |
| | +-----+
                    | | | | dim : 2
                    | | h_max : 1.168628e-01 |
                    | | | | h_min : 8.366122e-02 |
                    | \cdot |
| | | | n_points : 145
              | \cdot |
: 1
                    | +------
| Algebraic Solver
| +----+
| | Backend |
| +-----
| | | prefix : cfpdes |
```

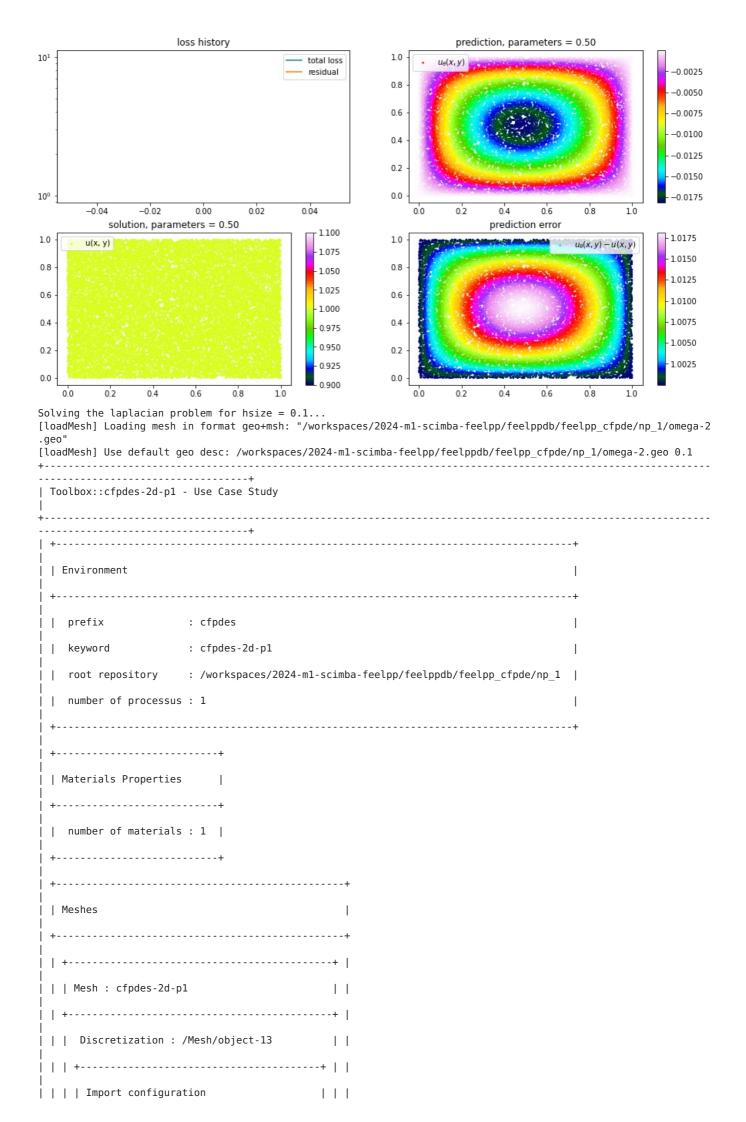
```
| | +-----+ |
: 1.000000e-50 | |
| | dtol : 1.000000e+05 | |
| | maxit : 1000 | |
| | rtol : 1.000000e-08 | |
: gmres | |
| +------
 | +------
| | SNES
| +------
| | atol : 1.000000e-50 | |
| | maxit : 50
| | reuse-jac : 0
| | rtol : 1.000000e-08 | |
| | stol : 1.000000e-08 | |
| +-----
| | KSP in SNES
| +------
| | maxit : 1000
              | | reuse-prec : 0
| | rtol : 1.000000e-05 | |
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| +------
| | | mat-solver-package : mumps | |
: lu | |
| | +-----+ |
|  | Toolbox Coefficient Form PDE : poisson eq
```

prefix	: cfpdes.poisson_eq		
keyword	: poisson_eq		1
 root repository	: /workspaces/2024-m1-scimba-feelpp/feelp	pdb/feelpp_cfpde/r	p_1
 number of processus	: 1		1
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modeling : Gene			
	son_eq		
	son_eq		
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		Shape	Components
		Shape	Components + Symbol
Name Expres		Shape	Components + Symbol +
Name Expres		Shape	Components + Symbol
Name Express		Shape	Components + Symbol +
Name Express		Shape	Components + Symbol + physics_poisson_eq_pois
Name Express		Shape	Components + Symbol + physics_poisson_eq_pois +
Name Express		Shape	Components + Symbol + physics_poisson_eq_pois + physics_poisson_eq_pois
Name Express		Shape	Components +
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Name Express		Shape	Components +
Name Express		Shape	Components + Symbol + physics_poisson_eq_pois + physics_poisson_eq_pois + physics_poisson_eq_pois + physics_poisson_eq_pois
Name Express		Shape	Components +
Name Express		Shape	Components +
Name Express		Shape	Components +
Name Express		Shape	Components +
Name Express		Shape	Components +
Name Express		Shape	Components +

	sh : poisson _.				
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' '	Import confi				
	geo-filenamo		:		·
' ' ' 	hsize	-		00000e-01	'
	generate-pa	rtitioninc			i I
					+
[)iscretizati	on		1	
+				+	
111	dim	: 2		1	
	h_average	: 1.01875	31e-01	1	
111	h_max	: 1.16862	28e-01	1	
	h_min	: 8.36612	22e-02	1	
	n_elements	: 248		1	
	n_faces	: 392		1	
	n_partition	: 1		1	
	n_points	: 145		1	
	order	: 1		1	
	real_dim	: 2		1	
	shape	: Simplex	c_2_1_2	I	
Bound	dary Conditio	ons 			
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	richlet				
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9			1 1		
	method : e		•		

```
| | | +-----+ |
| | | | Potential
| | | +-----+ | |
| \cdot |
| | | +------ | |
| | | | nComponents : 1
               | | | | | nComponents1 : 1
               | | | | | nLocalDof : 3
               : lagrange | | |
| | | | order
          : 1
               : scalar | | |
| | | +-----+ | |
| | | | Dof Table |
                | |
| | | +-----+
| | | | | nDof : 145 |
| | | base symbol : u
| | | | function space : /FunctionSpace/object-10 | |
      : Potential
                     | | | | prefix symbol : poisson_eq
```





```
| | | | geo-filename
        : 1.000000e-01 | | |
| | | | hsize
| | | | generate-partitioning : 0
| | | +-----+
| | |
| | +-----+
| | | dim : 2
                   1.1
| \cdot |
| | | h_max : 1.168628e-01 |
                    | | | | h_min : 8.366122e-02 |
                   1
                   | |
| | | n_partition : 1
                    | \cdot |
| | | | n_points : 145 |
                    1.1
| | +-----+
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| Algebraic Solver
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| | +-----
| | | Backend |
| | +----+
| | | prefix : cfpdes |
| +----+
| | +------
| | atol : 1.000000e-50 | |
| | | dtol : 1.000000e+05 | |
: 1000 | |
| | | reuse-prec : 0
             | | | rtol : 1.000000e-08 | |
| | type : gmres | |
| +------
```

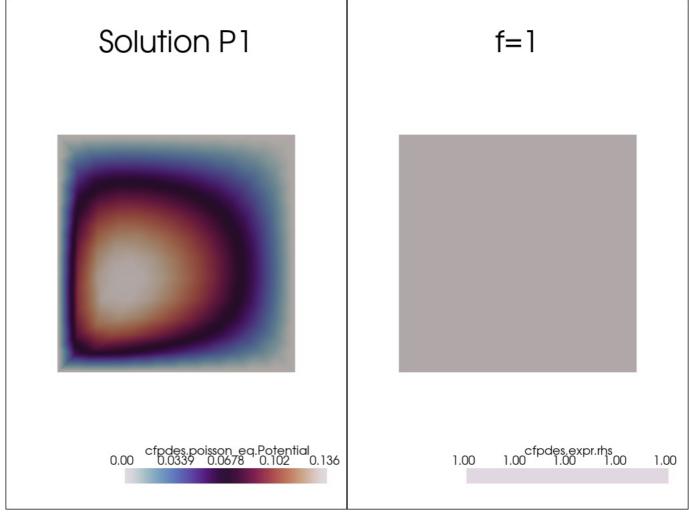
 maxit : 50	
 reuse-jac : 0	
 rtol	
maxit : 1000	
reuse-prec : 0	
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type	
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Toolbox Coefficient Form PDE : poisson_eq	
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 Environment	1
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	·
root repository : /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_	1 1
	_+
number of processus : 1 	I
	+
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+	

+-					
	modeling : GenericPDE				
	type : poisson_eq				
	name : poisson_eq				
	+				
		I			
	+				
	++			+	
	Name Expression	Symbol	Shape	Components	
	+=====+====+ ======+	======================================	-=======	+============	
1	c {x,y,-y,y+x}	physics_poisson_eq_poisson_eq_c	tensor2 [2x2]	+	
				Symbol	
Indices				+=======	
	:=+=======+			physics_poisson_eq_poiss	
on_eq_c_06)			+	
	-+		' 	physics_poisson_eq_poiss	
on_eq_c_01	. 0,1		· 	+	
	-+	I			
on_eq_c_16	$egin{array}{cccccccccccccccccccccccccccccccccccc$	 		physics_poisson_eq_poiss	
				+	
 on eq c 11		 		physics_poisson_eq_poiss	
		I		+	
1 + 1 + 1 + 1	++	 		+	
	f 1	physics_poisson_eq_poisson_eq_f	scalar	I	
				+	
	+				
+-	+				
	+	<u> </u>			
	+				
	+				
i i					
		I			
i i					
+		+			
	esh : poisson_eq	1.1			
+	·				
	iscretization : /Mesh/obj	ect-13			
+-		+			
	Import configuration	111			
1.1					
i i · ·	geo-filename :				
11					
		1.000000e-01			
	generate-partitioning :	0			

	+	
	+	
	Discretization	
 	+	
 	dim : 2	
 	h_average : 1.018751e-01	
	h_max : 1.168628e-01	
 	h_min : 8.366122e-02	I
<u> </u>	n_elements : 248	I
	n_faces : 392	I
	n_partition : 1	I
	n_points : 145	I
	order : 1	I
	real_dim : 2	I
	shape : Simplex_2_1_2	I
	+	I
+-	+	I
 +		-+
	Dirichlet	
 +	+	
i	-	
	nction Spaces	
i	-	
į i	+	
İ	Potential	
i	mesh : /Mesh/object-13	
	nSpace : 1	
1 1 1	++	

```
| | | | Basis
                | \cdot |
1.1.1
: lagrange | | |
: 1 | | |
: scalar | | |
| | | +-----+ | |
| | +-----
| | | | | nDof : 145 |
                | | | +-----+ |
| | | Potential
                      | | | | function space : /FunctionSpace/object-12 | |
| | | name : Potential
| | | | prefix symbol : poisson_eq
| | | +-----+ |
| | | +-----+ |
| | | base symbol : u_previous
| | | | function space : /FunctionSpace/object-12 | |
| | | name : Potential_previous | |
| | | | prefix symbol : poisson_eq
| | | Potential_remove_trial
| | | | base symbol : u_rt
                      | \cdot |
```

ļ		1	function space	: /FunctionSpace/object-12	
		ı	name	: Potential_remove_trial	11
			prefix symbol	· noisson ag	
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				+	
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Solving using Scimba

>> load network /workspaces/2024-m1-scimba-feelpp/feelppdb/feelpp_cfpde/np_1/networks/test.pth network was not loaded from file: training needed

