## Kernel: constant

#### Setting

| Right hand side      | linear                   |
|----------------------|--------------------------|
| Kernel               | constant                 |
| Integration Method   | retriangulate            |
| With caps            | True                     |
| Quadrule outer       | 7                        |
| Quadrule inner       | 7                        |
| Singular quad degree | 6                        |
| Delta                | 0.1                      |
| Ansatz               | $\overline{\mathrm{DG}}$ |
|                      |                          |

| h                          | dof        | L2 Error    | Rates      |
|----------------------------|------------|-------------|------------|
| 1.00e-01                   | 8.10e+01   | 2.78e-03    | 0.00e+00   |
| 5.00e-02                   | 3.61e + 02 | 6.91e-04    | 2.01e+00   |
| 2.50e-02                   | 1.52e + 03 | 1.66e-04    | 2.06e+00   |
| $1.25\mathrm{e}\text{-}02$ | 6.24e + 03 | 4.20 e - 05 | 1.98e + 00 |

| Right hand side                                 | linear                   |
|---|--------------------------|
| Kernel  | constant                 |
| Integration Method                              | retriangulate            |
| With caps                                       | False                    |
| Quadrule outer                                  | 7                        |
| Quadrule inner                                  | 7                        |
| Singular quad degree                            | 6                        |
| Delta   | 0.1                      |
| Ansatz  | $\overline{\mathrm{DG}}$ |
| Quadrule inner<br>Singular quad degree<br>Delta | 6<br>0.1                 |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 1.76e-02  | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 3.65 e-03 | 2.27e + 00 |
| 2.50 e-02 | 1.52e + 03 | 8.83e-04  | 2.05e+00   |
| 1.25 e-02 | 6.24e + 03 | 2.15e-04  | 2.04e+00   |

| Right hand side      | linear                   |
|----------------------|--------------------------|
| Kernel               | constant                 |
| Integration Method   | baryCenter               |
| With caps            | False                    |
| Quadrule outer       | 7                        |
| Quadrule inner       | 7                        |
| Singular quad degree | 6                        |
| Delta                | 0.1                      |
| Ansatz               | $\overline{\mathrm{DG}}$ |
|                      |                          |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 1.02e-01  | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 3.83e-02  | 1.41e + 00 |
| 2.50e-02  | 1.52e + 03 | 8.73e-03  | 2.13e+00   |
| 1.25 e-02 | 6.24e + 03 | 1.43 e-03 | 2.61e+00   |

| Right hand side      | linear        |
|----------------------|---------------|
| Kernel               | constant      |
| Integration Method   | retriangulate |
| With caps            | True          |
| Quadrule outer       | 7             |
| Quadrule inner       | 7             |
| Singular quad degree | 6             |
| Delta                | 0.1           |
| Ansatz               | CG            |

| h         | dof        | L2 Error | Rates      |
|-----------|------------|----------|------------|
| 1.00e-01  | 8.10e+01   | 3.35e-03 | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 7.60e-04 | 2.14e+00   |
| 2.50e-02  | 1.52e + 03 | 1.96e-04 | 1.96e + 00 |
| 1.25 e-02 | 6.24e + 03 | 4.84e-05 | 2.02e+00   |

| Right hand side      | linear        |
|----------------------|---------------|
| Kernel               | constant      |
| Integration Method   | retriangulate |
| With caps            | False         |
| Quadrule outer       | 7             |
| Quadrule inner       | 7             |
| Singular quad degree | 6             |
| Delta                | 0.1           |
| Ansatz               | CG            |
|                      |               |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 1.88e-02  | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 4.07e-03  | 2.21e+00   |
| 2.50e-02  | 1.52e + 03 | 1.05 e-03 | 1.95e + 00 |
| 1.25 e-02 | 6.24e + 03 | 2.56e-04  | 2.04e+00   |

| Right hand side      | linear     |
|----------------------|------------|
| Kernel               | constant   |
| Integration Method   | baryCenter |
| With caps            | False      |
| Quadrule outer       | 7          |
| Quadrule inner       | 7          |
| Singular quad degree | 6          |
| Delta                | 0.1        |
| Ansatz               | CG         |
| Allsatz              | <u> </u>   |

| h         | dof        | L2 Error    | Rates      |
|-----------|------------|-------------|------------|
| 1.00e-01  | 8.10e+01   | 1.19e-01    | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 3.76e-02    | 1.66e + 00 |
| 2.50e-02  | 1.52e + 03 | 9.82e-03    | 1.93e + 00 |
| 1.25 e-02 | 6.24e + 03 | 1.45 e - 03 | 2.76e + 00 |

# ${\bf Kernel:\ linear Prototype Microel astic}$

## Setting

| Right hand side      | linear                        |
|----------------------|-------------------------------|
| Kernel               | linear Prototype Microelastic |
| Integration Method   | retriangulate                 |
| With caps            | True                          |
| Quadrule outer       | 7                             |
| Quadrule inner       | 7                             |
| Singular quad degree | 6                             |
| Delta                | 0.1                           |
| Ansatz               | DG                            |
|                      |                               |

| h        | dof        | L2 Error | Rates      |
|----------|------------|----------|------------|
| 1.00e-01 | 8.10e+01   | 1.31e-01 | 0.00e+00   |
| 5.00e-02 | 3.61e + 02 | 5.34e-03 | 4.62e+00   |
| 2.50e-02 | 1.52e + 03 | 1.32e-04 | 5.33e+00   |
| 1.25e-02 | 6.24e + 03 | 3.33e-05 | 1.99e + 00 |

| Right hand side      | linear                                |
|----------------------|---------------------------------------|
| Kernel               | $linear {\bf Prototype Microelastic}$ |
| Integration Method   | retriangulate                         |
| With caps            | False                                 |
| Quadrule outer       | 7                                     |
| Quadrule inner       | 7                                     |
| Singular quad degree | 6                                     |
| Delta                | 0.1                                   |
| Ansatz               | DG                                    |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 1.32e-01  | 0.00e+00   |
| 5.00 e-02 | 3.61e + 02 | 3.67e-03  | 5.17e + 00 |
| 2.50 e-02 | 1.52e + 03 | 6.21 e-04 | 2.56e + 00 |
| 1.25 e-02 | 6.24e + 03 | 1.52 e-04 | 2.03e+00   |

| Right hand side      | linear                        |
|----------------------|-------------------------------|
| Kernel               | linear Prototype Microelastic |
| Integration Method   | baryCenter                    |
| With caps            | False                         |
| Quadrule outer       | 7                             |
| Quadrule inner       | 7                             |
| Singular quad degree | 6                             |
| Delta                | 0.1                           |
| Ansatz               | DG                            |

| h         | dof        | L2 Error | Rates    |
|-----------|------------|----------|----------|
| 1.00e-01  | 8.10e+01   | 1.33e-01 | 0.00e+00 |
| 5.00e-02  | 3.61e + 02 | 3.24e-02 | 2.04e+00 |
| 2.50e-02  | 1.52e + 03 | 7.36e-03 | 2.14e+00 |
| 1.25 e-02 | 6.24e + 03 | 1.21e-03 | 2.61e+00 |

| Right hand side      | linear                                 |
|----------------------|--|
| Kernel               | ${\bf linear Prototype Microel astic}$ |
| Integration Method   | retriangulate                          |
| With caps            | True                                   |
| Quadrule outer       | 7                                      |
| Quadrule inner       | 7                                      |
| Singular quad degree | 6                                      |
| Delta                | 0.1                                    |
| Ansatz               | CG                                     |
|                      |  |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 1.39e-01  | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 5.20 e-03 | 4.74e + 00 |
| 2.50e-02  | 1.52e + 03 | 1.44e-04  | 5.18e + 00 |
| 1.25 e-02 | 6.24e + 03 | 3.53 e-05 | 2.02e+00   |

| Right hand side      | linear                        |
|----------------------|-------------------------------|
| Kernel               | linear Prototype Microelastic |
| Integration Method   | retriangulate                 |
| With caps            | False                         |
| Quadrule outer       | 7                             |
| Quadrule inner       | 7                             |
| Singular quad degree | 6                             |
| Delta                | 0.1                           |
| Ansatz               | CG                            |
|                      |                               |

| h         | dof        | L2 Error | Rates      |
|-----------|------------|----------|------------|
| 1.00e-01  | 8.10e+01   | 1.40e-01 | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 3.12e-03 | 5.48e + 00 |
| 2.50e-02  | 1.52e + 03 | 7.48e-04 | 2.06e+00   |
| 1.25 e-02 | 6.24e + 03 | 1.82e-04 | 2.04e+00   |

| Right hand side      | linear                        |
|----------------------|-------------------------------|
| Kernel               | linear Prototype Microelastic |
| Integration Method   | baryCenter                    |
| With caps            | False                         |
| Quadrule outer       | 7                             |
| Quadrule inner       | 7                             |
| Singular quad degree | 6                             |
| Delta                | 0.1                           |
| Ansatz               | CG                            |

| h         | dof        | L2 Error | Rates      |
|-----------|------------|----------|------------|
| 1.00e-01  | 8.10e+01   | 1.40e-01 | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 3.16e-02 | 2.15e+00   |
| 2.50e-02  | 1.52e + 03 | 8.09e-03 | 1.97e + 00 |
| 1.25 e-02 | 6.24e + 03 | 1.28e-03 | 2.66e + 00 |

# ${\bf Kernel:\ linear Prototype Microel astic Field}$

## Setting

| Right hand side              | linearField                                       |
|------------------------------|---|
| Kernel<br>Integration Method | linearPrototypeMicroelasticField<br>retriangulate |
| With caps                    | True  |
| Quadrule outer               | 7   |
| Quadrule inner               | 7   |
| Singular quad degree         | 6   |
| Delta                        | 0.1   |
| Ansatz                       | DG  |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 5.82e-02  | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 4.18e-03  | 3.80e + 00 |
| 2.50e-02  | 1.52e + 03 | 5.42 e-05 | 6.27e + 00 |
| 1.25 e-02 | 6.24e + 03 | 1.29 e-05 | 2.07e+00   |

| Right hand side      | linearField                         |
|----------------------|-------------------------------------|
| Kernel               | linear Prototype Microelastic Field |
| Integration Method   | retriangulate                       |
| With caps            | False                               |
| Quadrule outer       | 7                                   |
| Quadrule inner       | 7                                   |
| Singular quad degree | 6                                   |
| Delta                | 0.1                                 |
| Ansatz               | DG                                  |

| h         | dof        | L2 Error    | Rates      |
|-----------|------------|-------------|------------|
| 1.00e-01  | 8.10e+01   | 5.84 e-02   | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 3.91e-03    | 3.90e+00   |
| 2.50e-02  | 1.52e + 03 | 1.04e-04    | 5.24e + 00 |
| 1.25 e-02 | 6.24e + 03 | 3.26 e - 05 | 1.67e + 00 |

| linearField                                 |
|---|
| $linear Prototype {\bf Microelastic Field}$ |
| baryCenter                                  |
| False                                       |
| 7   |
| 7   |
| 6   |
| 0.1   |
| DG  |
|   |

| h         | dof        | L2 Error | Rates      |
|-----------|------------|----------|------------|
| 1.00e-01  | 8.10e+01   | 5.87e-02 | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 4.94e-03 | 3.57e + 00 |
| 2.50e-02  | 1.52e + 03 | 1.12e-03 | 2.14e+00   |
| 1.25 e-02 | 6.24e + 03 | 1.63e-04 | 2.78e + 00 |

| Right hand side      | linearField                         |
|----------------------|-------------------------------------|
| Kernel               | linear Prototype Microelastic Field |
| Integration Method   | retriangulate                       |
| With caps            | True                                |
| Quadrule outer       | 7                                   |
| Quadrule inner       | 7                                   |
| Singular quad degree | 6                                   |
| Delta                | 0.1                                 |
| Ansatz               | CG                                  |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 5.98e-02  | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 4.16e-03  | 3.85e + 00 |
| 2.50e-02  | 1.52e + 03 | 5.04 e-05 | 6.37e + 00 |
| 1.25 e-02 | 6.24e + 03 | 1.21 e-05 | 2.06e+00   |

| Right hand side      | linearField                                 |
|----------------------|---|
| Kernel               | $linear Prototype {\bf Microelastic Field}$ |
| Integration Method   | retriangulate                               |
| With caps            | False                                       |
| Quadrule outer       | 7   |
| Quadrule inner       | 7   |
| Singular quad degree | 6   |
| Delta                | 0.1   |
| Ansatz               | CG  |

| h         | dof        | L2 Error  | Rates      |
|-----------|------------|-----------|------------|
| 1.00e-01  | 8.10e+01   | 5.99e-02  | 0.00e+00   |
| 5.00e-02  | 3.61e + 02 | 3.84e-03  | 3.96e + 00 |
| 2.50e-02  | 1.52e + 03 | 1.19e-04  | 5.01e+00   |
| 1.25 e-02 | 6.24e + 03 | 3.52 e-05 | 1.76e + 00 |

| Right hand side      | linearField                         |
|----------------------|-------------------------------------|
| Kernel               | linear Prototype Microelastic Field |
| Integration Method   | baryCenter                          |
| With caps            | False                               |
| Quadrule outer       | 7                                   |
| Quadrule inner       | 7                                   |
| Singular quad degree | 6                                   |
| Delta                | 0.1                                 |
| Ansatz               | CG                                  |

| h         | dof        | L2 Error  | Rates    |
|-----------|------------|-----------|----------|
| 1.00e-01  | 8.10e+01   | 6.01e-02  | 0.00e+00 |
| 5.00e-02  | 3.61e + 02 | 3.50 e-03 | 4.10e+00 |
| 2.50e-02  | 1.52e + 03 | 8.67e-04  | 2.01e+00 |
| 1.25 e-02 | 6.24e + 03 | 2.06e-04  | 2.08e+00 |