

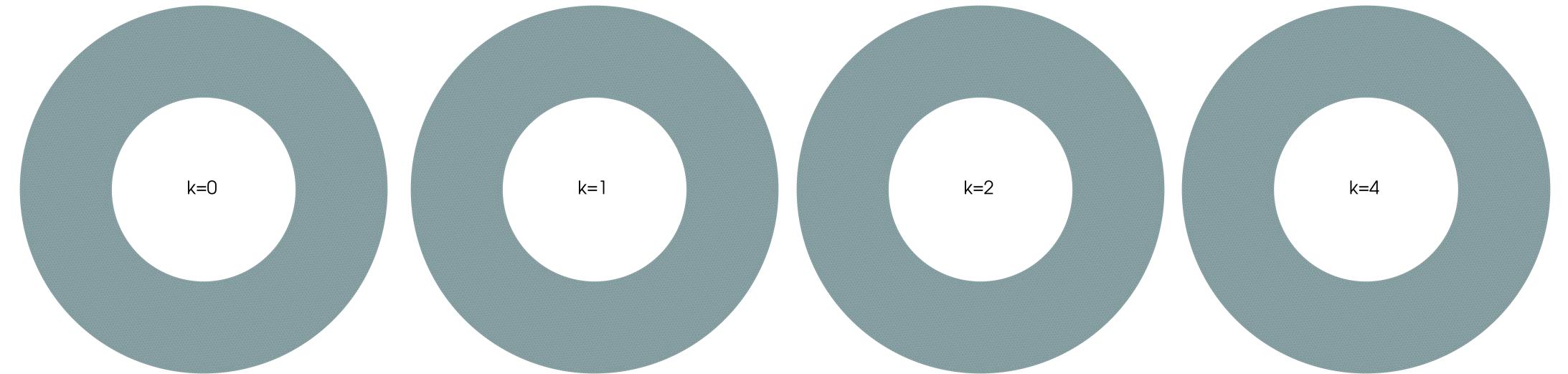
Annulus Benchmark: Thieulot&Puckett 2018

Benchmark Case

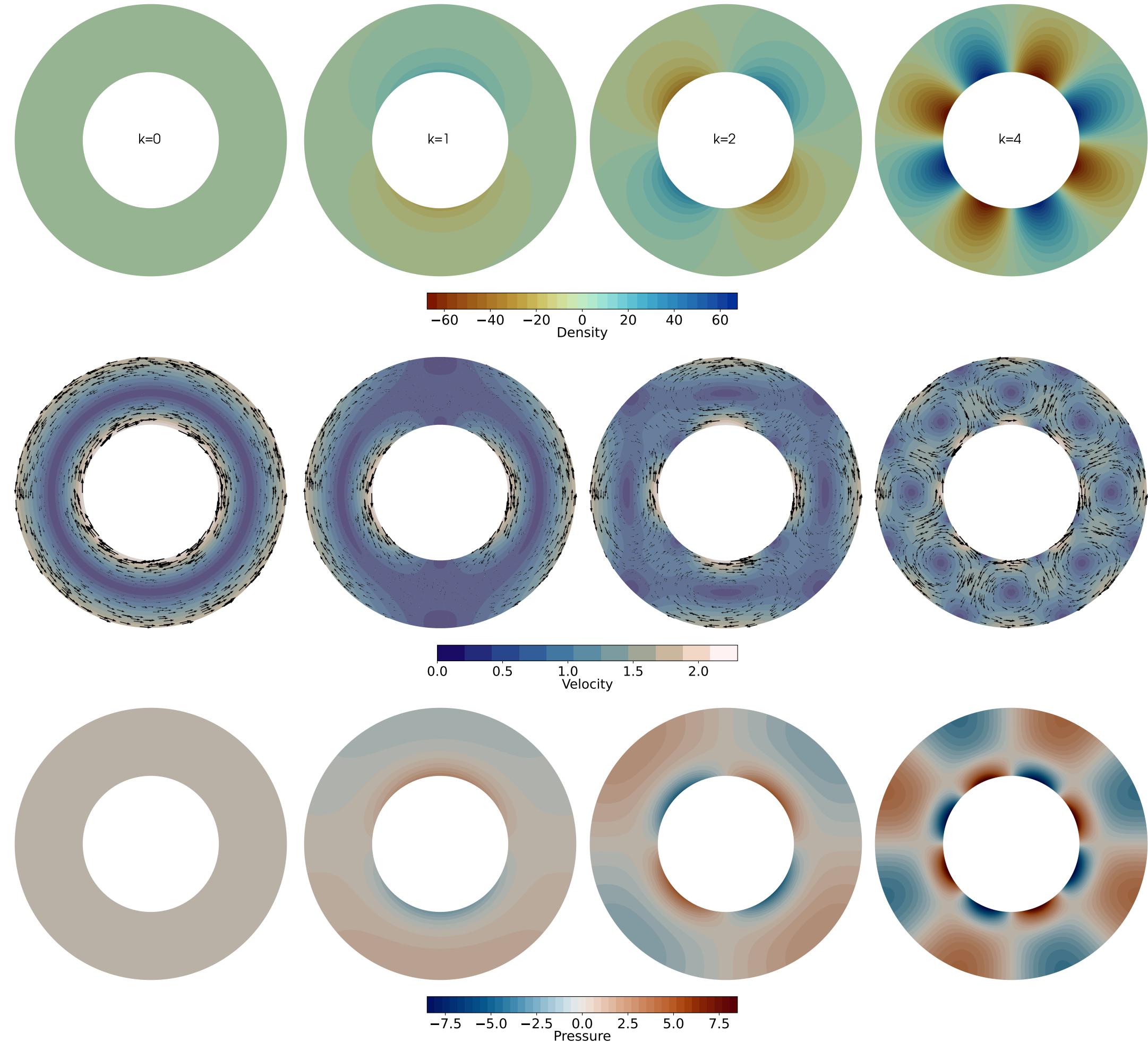
This benchmark creates an isoviscous, isothermal solution of the incompressible Stokes equations for which simple kinematic boundary conditions lead to structures that are serve as a model of "convection cells", where the number of these cells is determined by a single parameter k . In this case, the velocity is only prescribed on the inner and outer boundaries $r = R_1, R_2$ and in what follows we have set $\rho_0 = 0$.

```
# boundary conditions
v_diff = v_uw.sym - v_ana.sym
stokes.add_natural_bc(2.5e6*v_diff, "Upper")
stokes.add_natural_bc(2.5e6*v_diff, "Lower")
```

Mesh



Density, Velocity, Pressure



L_2 norm of the error

