**2D problem**

* 1. **Overview.**

Fluid characteristics: *viscous*, *incompressible*

* 1. **Main equations.**
  + Continuity equation
  + 2 momentum equations (Navier-Stokes)
  + Energy equation
  + State equation

Dimensionless form:

Dissipative function:

We solve only Navier-Stokes and Energy equations.

* 1. **Finite-difference schemes.**
  2. **Explicit iterative scheme.**

|  |  |
| --- | --- |
| n | previous time layer |
| n\* | fractional time layer |
| n+1 | next time layer |

Algorithm:

* + Set initial values for a fractional layer:
  + Do *num\_global* iterations:
* Calculate next time layer for each *u*, *v*, *T* variable (using described FD scheme)
* Update the fractional layer with a new solution:
  1. **Result verification.**

For results verification we use continuity equation integrated over each grid cell: