

# Particles in a Periodic Double Shear Flow - Numerical Results

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[Problem Specification](#)

- [1. Pre-Analysis & Start-Up](#)
- [2. Geometry](#)
- [3. Mesh](#)
- [4. Physics Setup](#)
- [5. Numerical Solution](#)
- [6. Numerical Results](#)
- [7. Verification & Validation](#)

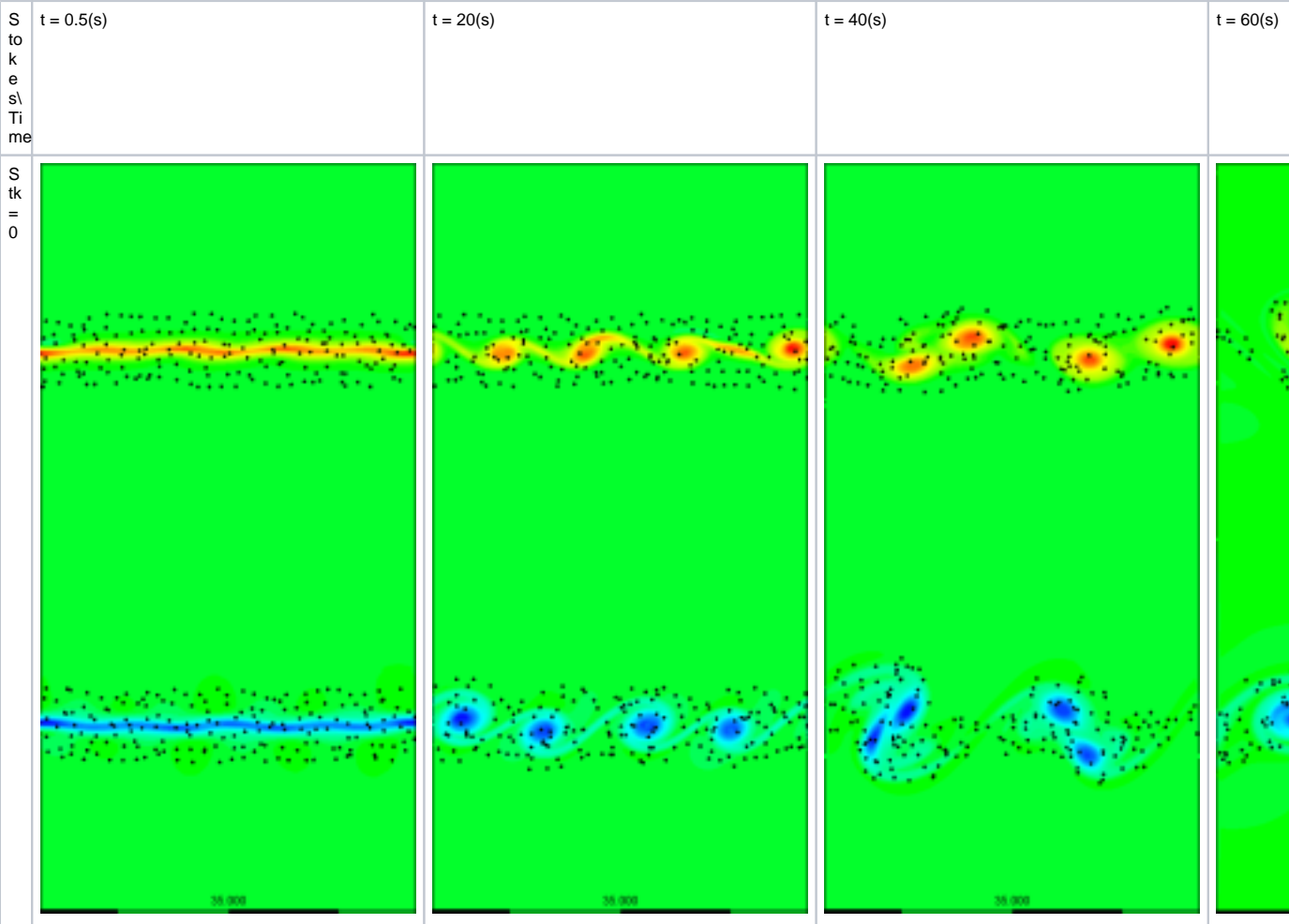
[Exercises](#)[Comments](#)

## Numerical Results

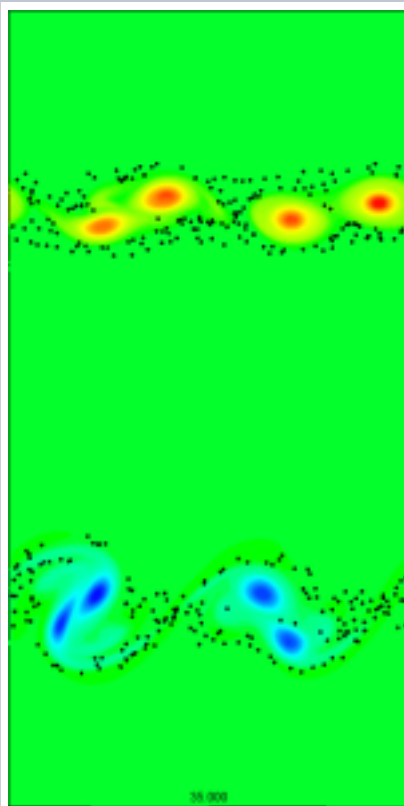
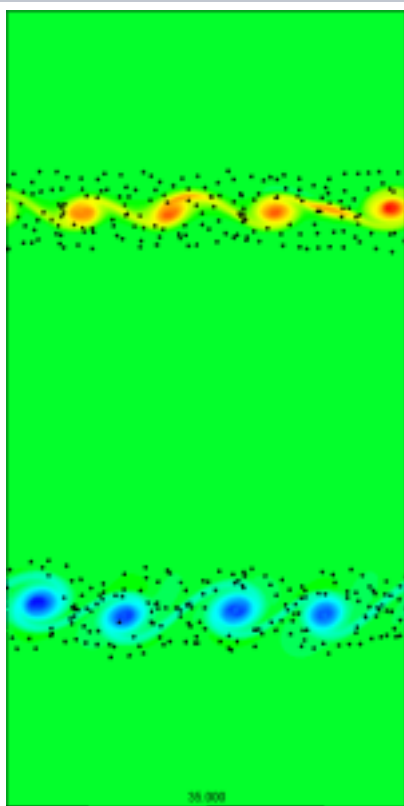
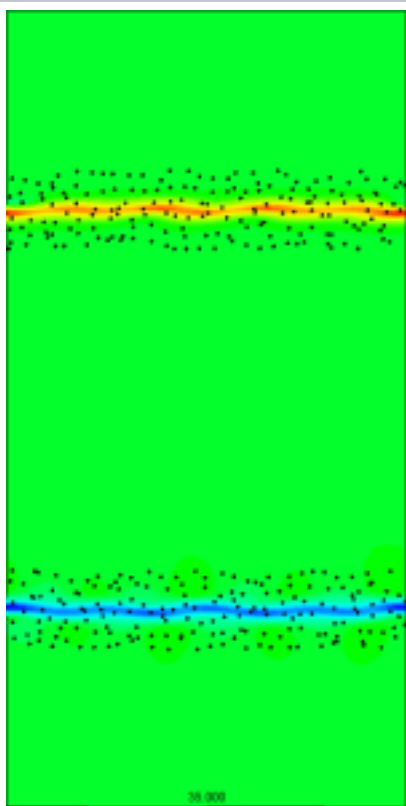
### Particle / Vortex Plot

The background is a plot of the vorticity. It is the Z component of the curl of the velocity field. Red stands for positive value (counter-clockwise rotation) and blue stands for a negative value (clockwise rotation). The particles are not plotted in accordance with their actual diameter, but rather a constant of 0.3 for better visual purposes.

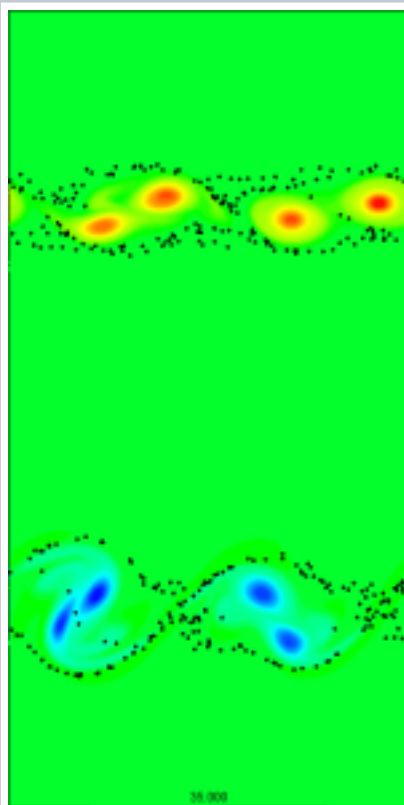
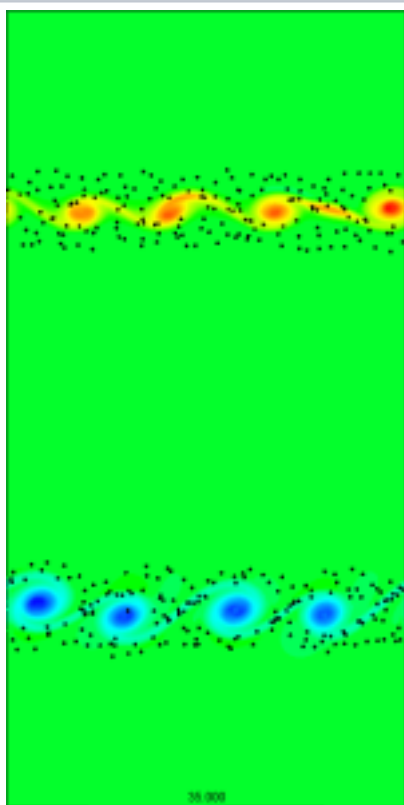
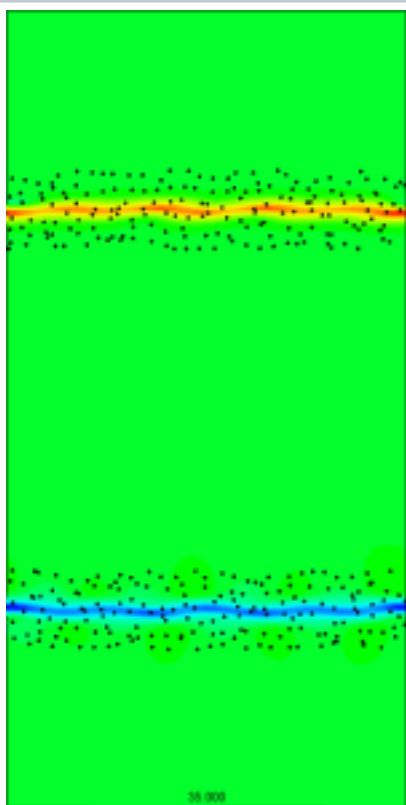
From the results below, we can observe maximum coupling between the particles and the vortices at stokes = 1. We can observe particles being trapped in the vortices at stokes = 0 condition and ballistic motion of particles at stokes = 100. The results for stokes = 0.2 and stokes = 5 tend to be more intermediate and less apparent.

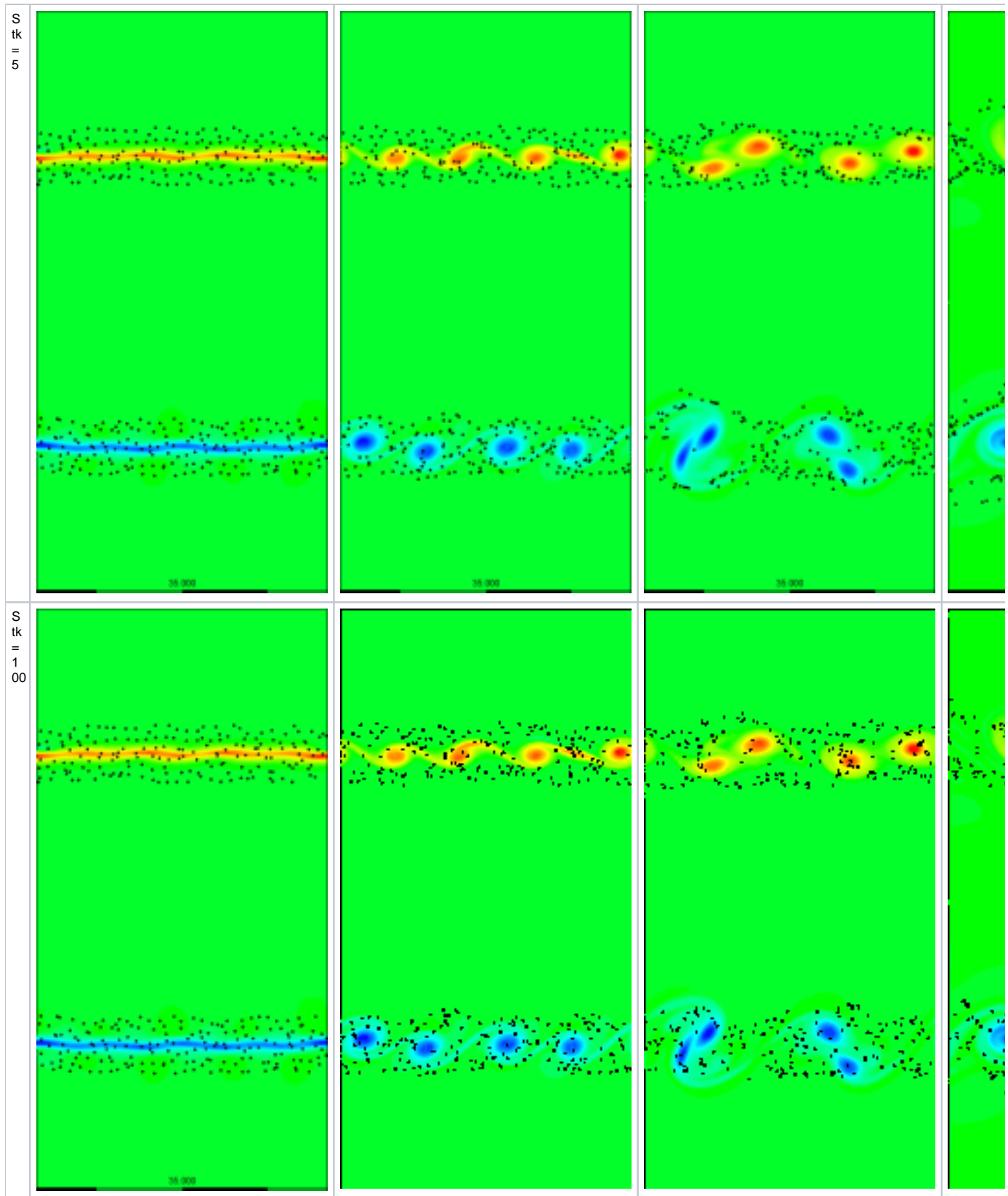


$S_{tk} = 0.2$



$S_{tk} = 1$





### Video of Particle Motion for Stokes = 1 Particles

The video below shows the particle motion of the stokes = 1 particles. Maximum coupling between the fluid vortices and the particles can be observed.

[Go to Step 7: Verification & Validation](#)

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