Quantitative study of coherent structures in the turbulent Taylor-Couette flow

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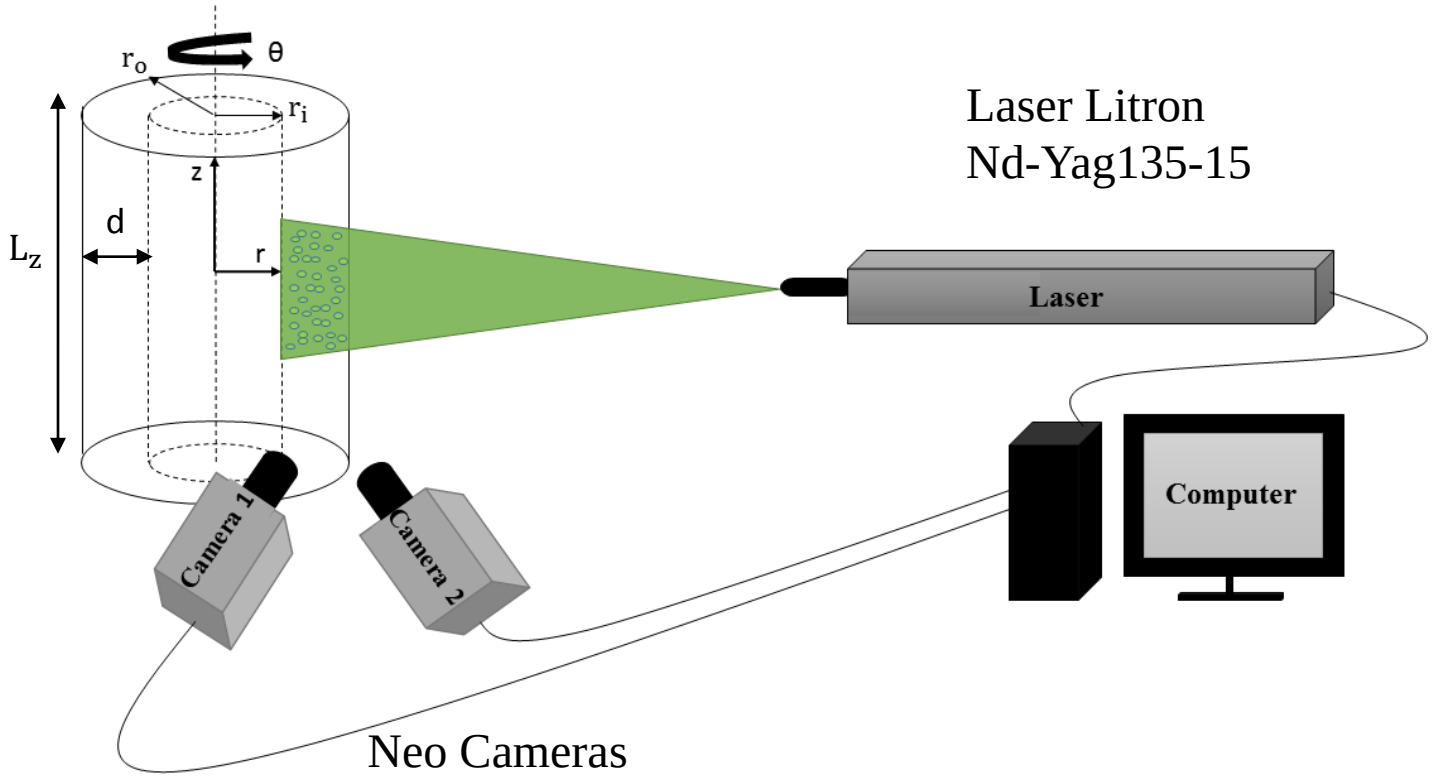
Geometrical characteristics

r_i=4 cm
$d = r_o - r_i = 1$ cm
$L_z = 45$ cm
$\Gamma_z = \frac{\Gamma_z}{d} = 45$
$\eta = \frac{r_i}{r_o} = 0.8$

Control parameters

$$R_{e_i} = \frac{\omega_i r_i d}{\upsilon} \quad \text{and} \quad R_{e_i} = \frac{\omega_i r_i d}{\upsilon}$$



Laser Litron
Nd-Yag135-15

Neo Cameras
(2560x2160
@25Hz)

Rencontres du non linéaire 21-23 mars 2017

The experimental protocol

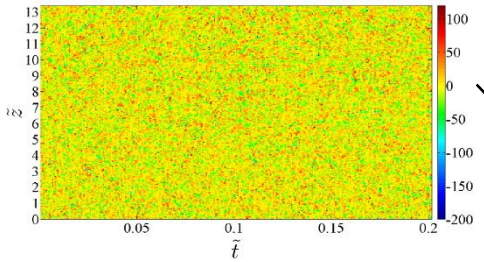
$R_{e_o} = -4368$ and R_{e_i} increases

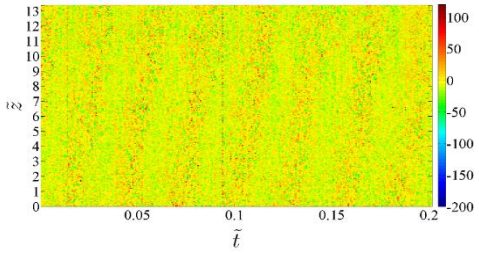
$$0 \leq R_{e_i} \leq 14000$$

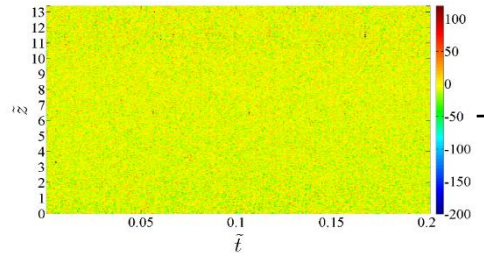
$R_{e_i} = 2496$

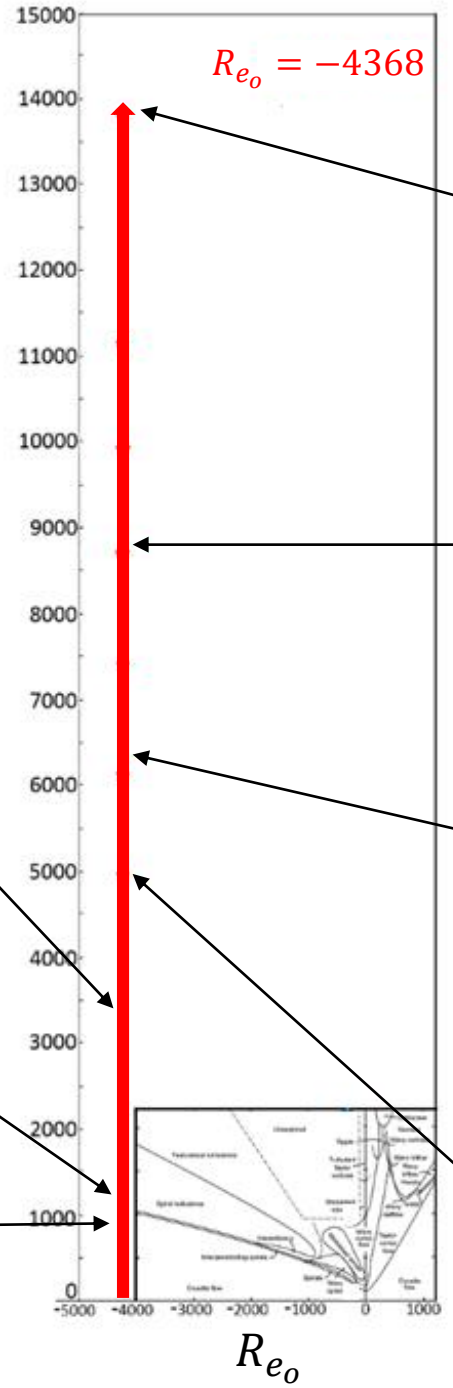
$R_{e_i} = 1098$

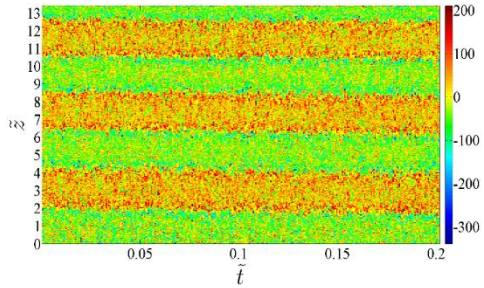
$R_{e_i} = 823$



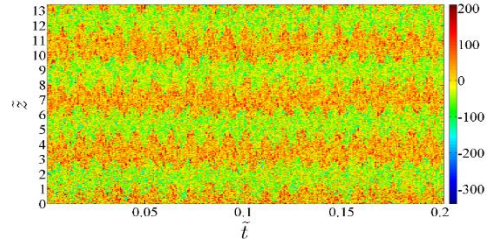




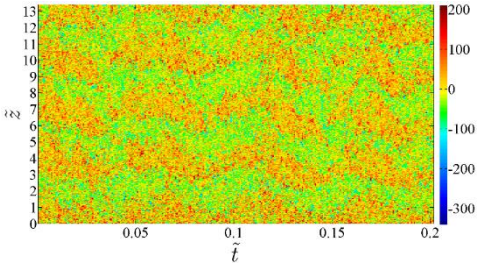




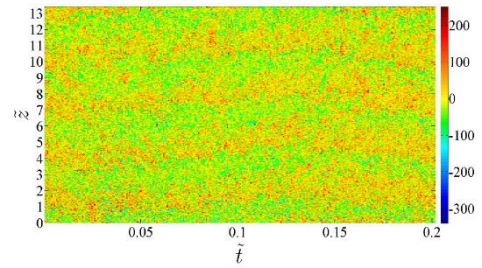
$R_{e_i} = 13868$



$R_{e_i} = 8737$



$R_{e_i} = 6241$



$R_{e_i} = 4993$