

Wind influence on heat transfer in turbulent convection

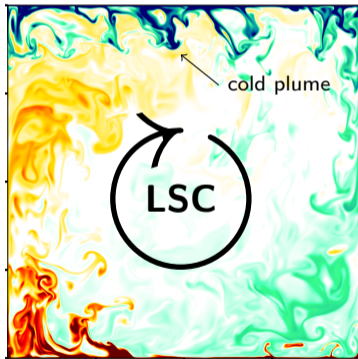
Nathan Carbonneau^{1,2}, Julien Salort³, Yann Fraigneau¹, Anne Sergent^{1,2}

¹LISN-CNRS, Université Paris-Saclay, Orsay, France ; ² Sorbonne Université, Paris, France ;

³ Lab. Physique, Ecole Normale Supérieure de Lyon, CNRS, Lyon, France

Rayleigh Bénard convection

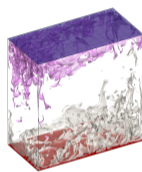
Top cold plate



Bottom hot plate

Temperature snapshot ; $Ra = 10^{10}$ $Pr = 4.4$
(water)

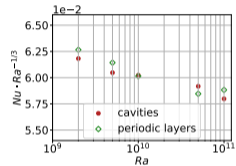
3D DNS of two physical configurations



Cavity



Periodic layer



Compensated heat flux scaling

Objective

Describe the changes in heat transfer imposed by the absence of wind

Plumes distribution

