<u>Title:</u>

Quasi-Two Dimensional Turbulence in MHD Flows

People:

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Collaborators:

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Grant:

Teaching Assistant Grant

Short Description:

Numerical and experimental studies are performed on quasi-two dimensional turbulent flows exited using electromagnetic forcing. The flow topology is similar to that observed in atmospheric flows and ocean currents. The objective of this project is to use both CFD simulations and PIV measurement to study the effect of surface roughness on the flow structure. The understanding of this type of flows is important for better weather prediction for instance.



Zoom on three vortex pairs generated by the Lorentz forces near the container edge. The arrows correspond to the electric current and the magnetic field is out from the paper plan: (a) represents the numerical simulation results and (b) the experimental results achieved using fluorescent dye