

Analysis and PDE Seminar

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TITLE: Free-Boundary MHD Equations with Surface Tension

Date : August 4th, 2021 (Wednesday)

Time : 2pm-3pm (Hong Kong time)

3pm-4pm (Korea time)

Link to ZOOM : <https://unist-kr.zoom.us/j/3170659442>

Meeting ID : 317 065 9442

Password : APDE21



Abstract. We establish the local well-posedness of the 3D incompressible ideal MHD equations describing the motion of a conducting fluid with free surface boundary in an electromagnetic field under the influence of surface tension. This is no easy consequence of the free-boundary Euler equations due to the strong coupling structure between the velocity and magnetic fields. In addition to adapting the method developed by Coutand and Shkoller to generate an approximate problem with artificial viscosity, we need to exploit the structure of the equations verified by the magnetic field to obtain a suitable energy functional that ties to the local existence.

All are welcome

This is a joint activity organized by Department of Mathematics, The Chinese University of Hong Kong, Hong Kong; Department of Mathematics, Institute of Mathematical Research, Research Division of Mathematical and Statistical Science, The University of Hong Kong, Hong Kong; and Department of Mathematical Sciences, Ulsan National Institute of Science and Technology, Korea. More details can be found in https://hkumath.hku.hk/~imr/event/CUHK_HKU_UNIST_Analysis_and_PDE/index.php.

