

MHD Days and GdRI Dynamo Meeting Report

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Autumn Travel grant 2018 – ELTE Talent Support

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Thursday, August 15, 2019

The conference was organized by the MHD group of the Institute of Fluid Dynamics at Helmholtz-Zentrum Dresden-Rossendorf (HZDR) which took place from Monday, November 26 to Wednesday, November 28, 2018. Following the tradition of former MHD Days and GdRI Dynamo meetings, the conference focused on geo- and astrophysical MHD as well as on industrial applications of MHD.

During the days of the conference there were seven sessions, each one had several talks presented, In the beginning of the conference, the first session talked about the fundamentals of dynamos (Gauss linking number and magnetic helicity, Singular diffusionless limits of double-diffusive instabilities in MHD etc...) then the application of the theory were reviewed by several number of researchers (MHD heat transfer of liquid metals, Experimental confirmation of additional magnetohydrodynamic pressure drop at junctions between electrically insulating flow channel inserts, among other topics).

In the 3rd, 4th and 5th sessions, the talk was focused on Dynamo theory, and the recent researches about it (Symmetry Breaking of Azimuthal Magnetorotational Instability Caused by Thermal Boundary Conditions, Non-linear non-localities in Babcock-Leighton dynamos, a solution to solar activity?, etc...) where by the end of the first day, the whole group went to the Welcome Reception and Poster Session at Schloss Eckberg, where I presented a poster entitled "Optimization of the Surface flux transportation parameters of the solar polar magnetic field", and discussed my work with some researchers who were interested.

Finally, Liquid Metal Batteries session were held to present the recent application of the dynamos where Electro-Vortex flow in Liquid Metal Batteries and Interfacial wave dynamics in liquid metal batteries were presented and discussed among other topics.

And to the end, one last session was devoted for the 60th Birthday of Gunter Gerbeth who was the initiator of the MHD research in Dresden.

By participating in this conference, I gained the appropriate experience in the dynamos field which enriched my knowledge in the research and met some other students from different places working in the same field of mine, which will be a point of interest for future work.

Conference webpage : <https://www.hzdr.de/db/Cms?pOid=56001&pNid=0>

Group Picture :

