Numerical modeling of conjugate magnetohydrodynamic flow phenomena

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Propositions

accompanying the dissertation

NUMERICAL MODELING OF CONJUGATE MAGNETOHYDRODYNAMIC FLOW PHENOMENA

by

Artem BLISHCHIK

1. The conjugate MHD approach is an accurate and robust method to model fluid-solid MHD interactions.

   This dissertation, Chapter 2

2. Changing the Reynolds and Hartmann numbers is not a necessary condition to suppress turbulence in a magnetohydrodynamic flow.

   This dissertation, Chapter 4

3. The presence of an electrically conductive solidified shell in a continuous casting mold should be taken into account in experiments and numerical simulations.

   This dissertation, Chapter 5

4. The phenomenon of patterned MHD turbulence can be observed if the computational domain is sufficiently long.

   Zikanov et al, App. Mech. Rev., 2014

5. Every new release of OpenFOAM makes work more difficult for physicists and easier for software engineers.

6. The most important part of any liquid metal experiment is cleaning the setup.

7. Science does not save the world, but science answers open questions.

8. The Netherlands is an ideal country to commute by e-steps.

9. Ph.D. delays will not be fixed by simply removing hospitality extensions.

10. Putting something socially provocative in the prepositions is quite dangerous since it is unknown what will be considered "unacceptable" in the future.

These propositions are regarded as opposable and defendable, and have been approved as such by the promotor prof. dr. dipl.-ing. S. Kenjereš.