

Regularity criteria for 3D MHD flows in terms of spectral components

Thursday 12 January 2023 17:00 (1 hour)

We extend the spectral regularity criteria of the Prodi-Serrin kind for the Navier-Stokes equations in a torus to the MHD equations. More precisely, the following is established: for any $N > 0$, let x_N and y_N be the sum of all spectral components of the velocity and magnetic field whose wave numbers possess absolute value greater than N ; then, it is possible to show that for any N the finiteness of the Prodi-Serrin norm of x_N implies the regularity of the weak solution (u, h) ; thus, no restriction on the magnetic field is needed.

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