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**Alexey Cheskidov** and **Mimi Dai\*** (mdai@uic.edu). *Regularity criteria for the 3D Navier-Stokes and MHD equations.*

We prove that a solution to the 3D Navier-Stokes or MHD equations does not blow up at  $t = T$  provided  $\limsup_{q \rightarrow \infty} \int_{\mathcal{T}_q}^T \|\Delta_q(\nabla \times u)\|_\infty dt$  is small enough, where  $u$  is the velocity,  $\Delta_q$  is the Littlewood-Paley projection, and  $\mathcal{T}_q$  is a certain sequence such that  $\mathcal{T}_q \rightarrow T$  as  $q \rightarrow \infty$ . This improves many existing regularity criteria. (Received August 14, 2015)