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Alfven Wave Propagation in Young Stellar Systems RAY HUMIENNY, MARCO FATUZZO, Xavier University, Cincinnati, OH — Young stellar systems have disks that are threaded by magnetic field lines with an hourglass geometry. These fields funnel ionizing cosmic rays (CRs) into the system. However, the effect is offset by magnetic mirroring. An previous analysis considered how the presence of magnetic turbulence moving outward from the disk would effect the propagation of cosmic-rays, and in turn, change the cosmic-ray ionization fraction occurring within the disk. This work indicated that turbulence reduces the overall flux of cosmic-rays at the disk, which has important consequences for both chemical processes and planet formation that occur within these environments. However, the analysis assumed ideal MHD condition in which the gas is perfectly coupled to the magnetic field. We explore here the validity of this assumption by solving the full equations governing the motion of both ions and neutral within the system.

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