3D MHD NUMERICAL SIMULATIONS OF STANDING WAVES IN CORONAL ACTIVE REGION LOOPS

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We present numerical results of 3D MHD model of an idealized active region loop. The active region is initialized as a force-free dipole magnetic configuration with gravitationally stratified density and contains a loop with a higher density than its surroundings. We consider slow standing waves as well as fast magnetosonic waves that are impulsively excited in a curved solar coronal loop. We discuss the role of curved magnetic field lines and the pulse overlapping at loops footpoints in 3D AR on the excitation and the damping of the waves. We find that footpoint excitation becomes more efficient in 3D curved loops than in arcades and slow waves can be excited during the time that is comparable to observed 1 wave-period due to the combined effect of the pulse inside and outside the loop. We compare the results to recent Hinode satellite observations of waves in coronal loop.