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3D MHD model of waves in a loop anchored in an realistic active region

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We present numerical results of three dimensional MHD model of the active region field. The active region is initialized using National Solar Observatory (NSO) Kitt Peak photospheric magnetogram and potential extrapolation of the magnetic field with gravitationally stratified density and contains a loop with a higher density than its surroundings. This study represents an extension to the model of McLaughlin & Ofman (2007). We introduce a velocity pulse to model the impact of a flare on surrounding fields, and study the resulting loop oscillations. We investigate the influence of different density profiles of the loop on the damping of the oscillations and compare our results with TRACE observations.