REDUCED MHD EQUATIONS FOR ALFVÉN EIGENMODES IN STELLARATORS

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Reduced magnetohydrodynamic (MHD) equations are derived, in which the plasma compressibility is taken into account, but fast magnetoacoustic waves are excluded. For the sake of simplicity all terms associated with the pressure gradient and the plasma current are disregarded. However, the continuous spectrum of the obtained equations is shown to coincide exactly with the continuous spectrum of the full MHD equations. First results of the code COBRAS (COntinuum BRanches of Alfvén and Sound waves) intended for calculation of coupled Alfvén and slow continua, are presented. Effect of the compressibility on the Alfvén continuum in Wendelstein-line stellarators is studied.