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Magneto-seismology with Alfvén waves in the solar atmosphere

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Abstract. There have recently been significant claims of Alfvén wave observation in the solar chromosphere and corona. We demonstrate how the observational properties of such Alfvén waves in magnetic flux tubes can be exploited for the purposes of solar magneto-seismology, i.e., for the construction of an accurate magnetic mapping in the chromosphere and possibly in the corona. Specific, very high resolution Doppler observations interpreted as Alfvén waves will be discussed and a first map of magnetic map will be revealed. Furthermore, the issues related to cut-off frequencies, an important natural consequence of plasma inhomogeneity in the axial direction of solar waveguides, preventing the propagation of Alfvénic waves, will also be addressed.