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Shearing flows in the solar corona

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Abstract. Shearing flows in the solar corona have been repeatedly reported since Doschek et al. (1976). Various observational papers show strong shearing flows associated with strong magnetic field concentrations in active regions (e.g. Marsch et al. 2008, Hinode/EIS) as well as in quiet Sun regions (e.g. Tian et al. 2008, Aiouaz 2008, SUMER/SOHO). In this contribution I present a 3D MHD model that describes the solar atmosphere from the high chromosphere to the lower solar corona above a synthetic supergranular cell. I present results on the relation between the magnetic topology and the thermodynamic properties of the plasma including plasma flows in the transition region and the corona. Signatures of the magnetic field concentration is to be found in the corona and the transition region in the form of shearing flows due to the compression of the magnetic field.