

Modelling formation and evolution dynamics of the loop prominences and substance motion in magnetic field

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We present a new model approach to modelling formation and evolution dynamics of the loop prominences and response of the solar atmosphere in a loop to bombardment of electrons and other particles. As it is well known the existed models of creation of the active prominences can be divided on two groups. In first group models explain appearance of relatively cold and substance in the corona due to the condensation of the coronal gas (Olsson-Likaudis, Lust-Zirin et al). In second group one can indicate mechanisms, when the prominence substance is transit up from low layers of the solar atmosphere (Jeferris-Orral, Goldsmith et al). We investigate the kinematics of the matter motion in a variable magnetic field in the magnetic hydrodynamical approximation of a strong field and cold plasma. The variation of magnetic moments of two dipoles system leads to development of such phenomena as loop prominences and coronal rain. Our model generalizes the Ivanov-Platov Troitzk model (c.f.[1]).

References:

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