



Identification of standing MHD modes in MHD simulations of planetary magnetospheres. Application to Mercury.

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We present 3D simulations of the interaction of the solar wind with Mercury's magnetosphere using the magnetohydrodynamic code AMRVAC. A procedure for the identification of standing MHD modes has been applied to these simulations showing that large scale standing slow mode structures may exist in Mercury's magnetosheath. The identification is mostly based on relatively simple approximate analytical solutions to the old problem of determining the family of all standing linear plane MHD waves in a flowing plasma. The question of the identification of standing slow mode structures using in situ measurements such as the future BepiColombo MMO mission to Mercury will be discussed as well.