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MHD Waves in Coronal Holes and Coronal Seismolgy

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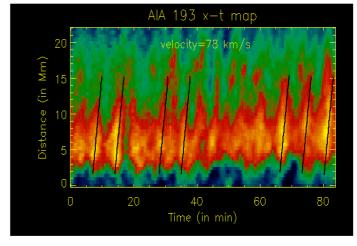
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Dr. Dipankar Banerjee is a professor of Indian Institute of Astrophysics (IIA) and head of computer division of IIA. He is an honorary fellow of the Royal Astronomical Society, London. He plays active roles in international projects. For example, he is Co-PI of the coronagraph instrument for Aditya Mission which will be the first India's dedicated solar satellite for studying the atmosphere of Sun. He is core member of the Science team for the National Large Solar Telescope project. He is an associate Editor of the international Journal Solar Physics. He specializes in solar magnetohydrodynamics processes. His publications in this field have more than 1500 citations.

Abstract

Coronal holes are the dark patches in the solar corona associated with relatively cool, less dense plasma and unipolar fields. The fast component of the solar wind emanates from these regions. Several observations reveal the presence of magnetohydrodynamic (MHD) waves in coronal holes which are believed to play a key role in the acceleration of fast solar wind. The recent advent of high-resolution instruments had brought us many new insights



on the properties of MHD waves in coronal holes which will be presented. The advances made in the identification of compressive slow MHD waves in both polar and equatorial coronal holes, their possible connection with the recently discovered high-speed quasi-periodic up-flows, their dissipation will be addressed. If these waves can be used for coronal seismology will be also reviewed.