Abstract Submitted
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Bispectral analysis of broadband and quasi-coherent oscillations (geodesic-acoustic modes) to interpret wave-wave interactions in the T-10 Tokamak[1] M.E. KOEPKE, S.H. NOGAMI, G.A. RIGGS, West Virginia Univ, USA, A.V. MELNIKOV, Kurchatov NRC and MEPhI, Russia, L.G. ELISEEV, S.E. LYSENKO, Kurchatov NRC, Russia, P.O. KHABANOV, M.A. DRABINSKIJ, Kurchatov NRC and MIPT, Russia, N.K. KHARCHEV, Kurchatov NRC and GPI-RAS, Russia, A.S. KOZACHEK, Institute of Plasma Physics, NSC KIPT, Ukraine, M.V. UFIMTSEV, Moscow State University, Russia, HIBP TEAM TEAM — Local fluctuations of poloidal electric field ˜E_pol and density ˜n_e were simultaneously measured by a heavy ion beam probe [Demers et al., 2001; Dnestrovskij et al., 1994; Melnikov et al., 2017] having a 5-slit energy analyzer that allows an estimate of the turbulent particle flux and E B rotation velocity in the gradient zone of plasma column (r/a = 0.8) [Eliseev et al., 2018]. High spatial and temporal resolution of the modern multichannel HIBP makes the HIBP an effective tool to study plasma oscillations. Previous work documented time-resolved interactions between measured plasma parameters using correlation analysis (of ˜E_pol and ˜n_e and cross-phase). This talk documents time-resolved interactions between measured plasma disparate-frequency modes using bicorrelation analysis (of ˜E_pol and ˜n_e and bi-phase) [Stauber, 1995; Riggs, 2019]. The intention is to identify the direction of energy transfer between modes (broadband, quasi-coherent).

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