

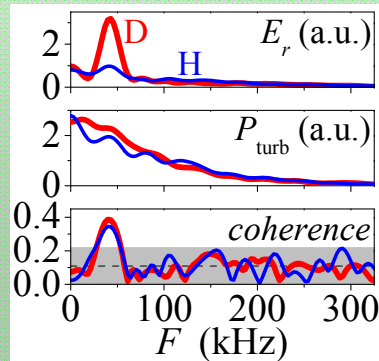
# The Isotope Effect in GAM – Turbulence Interplay and Anomalous Transport in Tokamak

A.D. Gurchenko<sup>1</sup>, E.Z. Gusakov<sup>1</sup>, P. Niskala<sup>2</sup>, A.B. Altukhov<sup>1</sup>, L.A. Esipov<sup>1</sup>,  
D.V. Kouprienko<sup>1</sup>, M.Yu. Kantor<sup>1</sup>, S.I. Lashkul<sup>1</sup>, S. Leerink<sup>2</sup>, A.A. Perevalov<sup>1</sup>

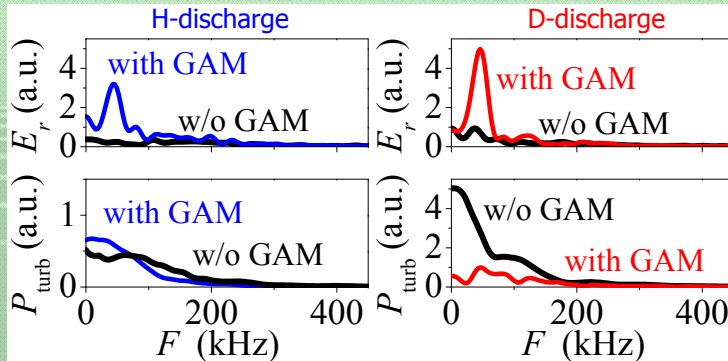


## FT-2 tokamak experiment (microwave UHR backscattering and reflectometry)

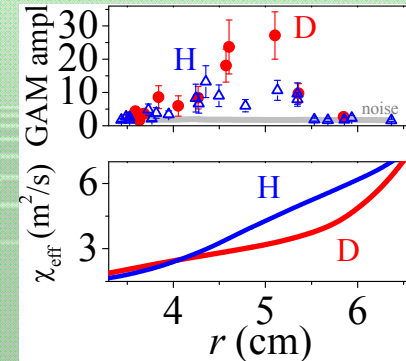
1) The first observations of turbulence level modulation at GAM frequency



2) The turbulence suppression by GAM is much stronger in Deuterium than in Hydrogen

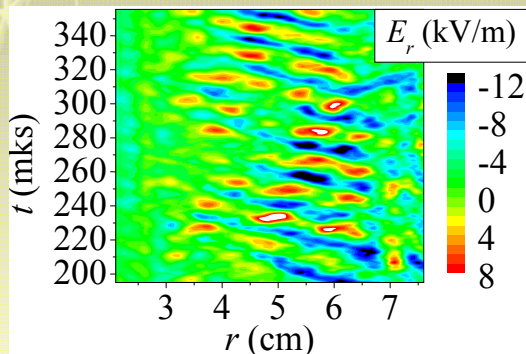


3) The anti-correlation of GAM ampl. and electron thermal diffusivity

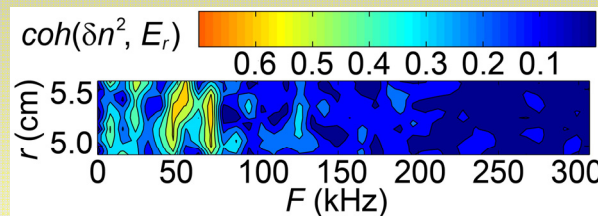


## The turbulence and diffusivity modulation at GAM frequency as provided by ELMFIRE GK code

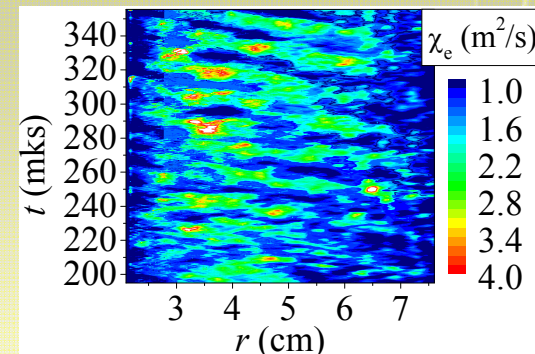
1) The Electric field GAM wave



2) High coherence between  $E_r$  and  $\delta n^2$  at the GAM frequency



3) Thermal diffusivity wave at GAM frequency



The turbulence modulation at GAM frequency is observed in agreement with the theory prediction (Hahn 1999), accompanied by suppression of its mean level stronger in D than in H.