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TAEs excited by ICRH beatwaves in the ASDEX Upgrade Tokamak K. SASSENBERG, Department of Physics, University of Tulsa, Tulsa, Oklahoma 74104, USA, P.J. MCCARTHY, Department of Physics, University College Cork, Association EURATOM-DCU, Cork, Ireland, M. MARASCHEK, W. BOBKOV, M. GARCÍA-MUÑOZ, V. IGOCHINE, P. LAUBER, S. GÜNTER, Max-Planck-Institut fuer Plasmaphysik, EURATOM Association, Garching, Germany, N. HICKS, Department of Physics, University of Washington, Seattle, Washington 98195, USA, ASDEX UPGRADE TEAM — Loss of fast ions caused by Toroidicity induced Alfvén Eigenmodes (TAEs) reduces plasma heating and can cause damage to plasma facing components in the vacuum vessel. TAEs are typically excited through auxilliary heating schemes, such as Ion Cyclotron Resonance Heating (ICRH) with limited control. Here an ICRH beatwave can provide that control. The radial structure of a beatwave excited TAE reconstructed from Soft X-Ray measurements is shown to agree with simulations from the gyro- kinetic code LIGKA, and its amplitude is sufficiently small so as not to perturb the plasma state. Since each excited TAE also provides a point of q-profile information to constrain the equilibrium reconstruction, a passive diagnosis of the plasma's safety factor profile can be made. Furthermore, an ICRH beatwave can increase the amplitude of existing TAEs thereby providing the opportunity to study their effect on the fast ion population.

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