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Study of triggering mechanisms for internal transport barriers in Alcator C-Mod K. ZHUROVICH, Plasma Science and Fusion Center, MIT, Cambridge, MA 02139, C.L. FIORE, D.R. ERNST, P.T. BONOLI, A.E. HUBBARD, M.J. GREENWALD, E.S. MARMAR, J.E. RICE — Internal transport barriers (ITBs) can be routinely produced in C-Mod steady enhanced D_α (EDA) H-mode plasmas by applying ICRF at $|r/a| \geq 0.5$ (off-axis heating). Access to the off-axis ICRF heated ITBs may be understood within the paradigm of marginal stability. Analysis of the electron temperature profiles shows a decrease of a/L_{Te} in the ITB region as the RF resonance is moved off axis with no apparent difference for the very core and edge plasma regions. Ion temperature profiles are calculated using the transport analysis code TRANSP. These calculations also reveal a decrease of a/L_{Ti} in the ITB region as the ICRF resonance is moved outward. Furthermore, there is experimental evidence that Ti profiles broaden as ICRF changes from on-axis to off-axis heating. Stability analysis is performed using the gyrokinetic code GS2. Linear GS2 calculations do not reveal any difference in ETG growth rate profiles for ITB vs. non-ITB discharges. However, they show that the region of stability to ITG modes gets wider as the ICRF is moved outward. Supported by USDoE award DE-FC02-99ER54512

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