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Characteristics of confinement enhancement in KSTAR hybrid scenarios YONG-SU NA, Y.H. LEE, M.S. PARK, S.K. KIM, C.Y. LEE, C.S. BYEON, Seoul National University, S.M. YANG, Princeton Plasma Physics Lab, Y.M. JEON, H.S. KIM, M.H. WOO, J.W. JUHN, J.H. KIM, W.H. KO, S.W. YOON, J.S. KANG, National Fusion Research Institute, RAFFI NAZIKIAN, Princeton Plasma Physics Lab — Hybrid scenarios are being developed in KSTAR which exhibit H89 >2.0, betaN >2.4 sustained more than 5*tauE at q95 <6.5 without or mild sawtooth. The origin of the confinement enhancement is studied in a slow transition phase where the interplay between core and edge pedestal appears. The power balance, the dominant core turbulence characteristics, and the edge pedestal is analyzed. The power balance analysis is done by the 1.5D transport code, ASTRA. The turbulence property is investigated by the linear gyro-kinetic simulations using GKW. The linear pedestal MHD stability is analzsed with MISHKA and EPED. The analyses show that the finite beta stabilization effect plays a role in the core turbulence and the diamagnetic flow and Shafranov shift contribute enhancement of the pedestal stability.

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