SOL Thermal Instability due to Radial Blob Convection\textsuperscript{1} D.A. D’IPPOLITO, J.R. MYRA, D.R. RUSSELL, Lodestar Research Corporation — C-Mod data\textsuperscript{2} suggests a density limit when rapid perpendicular convection dominates SOL heat transport. This is supported by a recent analysis\textsuperscript{3} of BOUT code turbulence simulations, which shows that rapid outwards convection of plasma by turbulent blobs is enhanced when the X-point collisionality is large, resulting in a synergistic effect between blob convection and X-point cooling. This work motivates the present analysis of SOL thermal equilibrium and instability including an RX-regime model\textsuperscript{4} of blob particle and heat transport. Two-point (midplane, X-point) SOL thermal equilibrium and stability models are considered including both two-field (T) and four-field (n,T) treatments. The conditions under which loss of thermal equilibrium or thermal instabilities occur are established, and relations to the C-Mod data are described.

\textsuperscript{1}Work supported by US DOE grant DE-FG03-97ER54392.