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Seenith Sivasundaram* (siva@erau.edu), Math dept, Daytona Beach, FL 32114. *Integro differential systems with state dependent delay and the instability.*

State dependent time delay often occurs in engineering systems, medicine, hydro dynamics, laser physics, chemistry etc. Since the existence of state dependent time delay usually causes instability of the systems, the study of state dependent time delay systems has received considerable attentions in the recent years especially in Internet congestion, congestive heart failure in humans, traffic congestion in automated highway, mobile networking, population growth etc. In this paper, we consider a linear integro-differential system with state dependent delay and obtain the sufficient conditions for instability of the null solution to the system using the idea of (h, k) dichotomies. (Received September 13, 2005)