



## ADAPTIVE CONGESTION CONTROL FOR ATM UBR SERVICE USING NEURAL NETWORKS

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**ABSTRACT**—This paper presents an adaptive congestion control scheme using neural networks for the Unspecified Bit Rate (UBR) service class in ATM networks. The UBR service supports a general delivering mode for those data with less delay and cell loss, and offers the best effort service. Based on the EPD (Early Packet Discard) technique that basically employs a threshold to define the current traffic status and classifies the cells into two classes, the first cell and the non-first cell, the proposed method provides an adaptive threshold learned from the neural networks in advance. The adaptive threshold will become larger for accommodating both kinds of cells if the traffic is light and become smaller for only accepting the non-first cell if the traffic is heavy. Simulation results show that this scheme can significantly improve the TCP (Transmission Control Protocol) traffic over the UBR service.

**Key Words:** Unspecified Bit Rate (UBR), Asynchronous Transfer Mode (ATM), Early Packet Discard (EPD), Neural Network