



ALTERNATING TIME-OFFSET DOWNLINK SDMA FOR LEGACY IEEE 802.11A/G MOBILE STATIONS (ThuPmOR3)

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✳ **Abstract :** We address the problem of downlink throughput improvement for IEEE 802.11a/g systems by using a modified access point (AP) equipped with multiple antennas. The main restriction is that standard terminals should not be modified in any way. An alternating time-offset space division multiple access (SDMA) solution is proposed to overcome restrictions imposed by the legacy terminal requirement. In this paper we concentrate on channel estimation over acknowledgement (ACK) bursts and effect of imperfections such as non-ideal channel reciprocity and delayed channel estimates. Simulations based on channel models approved by the IEEE 802.11 Standard Group demonstrate that a near doubling of downlink capacity can be achieved in a conference room environment in the case of low levels of channel reciprocity errors at the AP.