



DISTRIBUTED AND CENTRALIZED POWER CONTROL ALGORITHMS FOR VERY HIGH SPEED DIGITAL SUBSCRIBER LINES (VDSL) UPSTREAM TRANSMISSION (ThuPmOR9)

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✳ **Abstract :** Very High-Speed Digital Subscriber Lines upstream transmission suffers from strong far end crosstalk (FEXT) by the shortest lines in a multiuser communication environment. This problem called “Near-Far Effect” drastically reduces the upstream capacity on the longer lines. Power control algorithms effectively handle this problem and maximize the achievable data rate region, given an average power constraint for each user. This paper examines distributed and centralized power control algorithms and compares their performance in a frequency selective multiuser interference channel considering VDSL upstream transmission environment.