



PLM SEQUENCES FOR THE PERFORMANCE OPTIMIZATION OF LINEAR MULTIUSER DETECTORS (WedPmPO1)

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✳ **Abstract :** This paper deals with the general problem of the design/choice of spreading sequences for asynchronous DS-CDMA communication systems, employing a linear multiuser detection front-end. After a brief problem formulation, we propose a new near-optimal spreading sequences design, based on piece wise linear chaotic Markovian sequences (PLM sequences). The performance evaluation of this spreading sequences design, when the system is considered in the Gaussian approximation settings is shown to outperform the conventional Gold based spreading and enhances the system capacity, evaluated in terms of available users for a target bit error rate (BER) system performance.