

# *Variable Length Adjacent Partitioning for PTS Based PAPR Reduction of OFDM Signal*

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## **Abstract:**

*Peak-to-Average power ratio (PAPR) is a major drawback in OFDM communication. It leads the power amplifier into nonlinear region operation resulting into loss of data integrity. As such, there is a strong motivation to find techniques to reduce PAPR. Partial Transmit Sequence (PTS) is an attractive scheme for this purpose. Judicious partitioning the OFDM data frame into disjoint subsets is a pivotal component of any PTS scheme. Out of the existing partitioning techniques, adjacent partitioning is characterized by an attractive trade-off between cost and performance. With an aim of determining effects of length variability of adjacent partitions, we performed an investigation into the performances of a variable length adjacent partitioning (VL-AP) and fixed length adjacent partitioning in comparison with other partitioning schemes such as pseudorandom partitioning. Simulation results with different modulation and partitioning scenarios showed that fixed length adjacent partition had better performance compared to variable length adjacent partitioning. As expected, simulation results showed a slightly better performance of pseudorandom partitioning technique compared to fixed and variable adjacent partitioning schemes. However, as the pseudorandom technique incurs high computational complexities, adjacent partitioning schemes were still seen as favorable candidates for PAPR reduction.*