

# PAPR Reduction in FBMC-OQAM Signals with Half Complexity of Trellis-based SLM

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**Abstract**— The filter Bank Multicarrier (FBMC) modulation with offset-QAM (OQAM) has attracted attention as a major candidate for future wireless communication systems which has several advantages. A disadvantage of FBMC-OQAM is high peak-to-average power ratio (PAPR). To overcome this problem, the trellis-based SLM technique is employed and achieved a much better PAPR reduction performance. However, The Trellis-based algorithm has also the intrinsic disadvantage of high computational complexity, to decreasing the complexity will make the system more desirable. This paper proposes the half-complexity algorithm for trellis-based SLM scheme which achieves lower computational complexity when compared to trellis-based SLM scheme with small degradation of PAPR reduction performance. From various simulation results, the proposed algorithm shows less computational complexity about 50% compared to the trellis-based algorithm with similar PAPR reduction performance.

**Keywords**— FBMC-OQAM, PAPR, SLM, Trellis-based SLM and Half Complexity Trellis-based SLM.



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