## World Academy of Science, Engineering and Technology International Journal of Computer and Information Engineering Vol:10, No:07, 2016

## Experimenting with Error Performance of Systems Employing Pulse Shaping Filters on a Software-Defined-Radio Platform

Authors: Chia-Yu Yao

**Abstract:** This paper presents experimental results on testing the symbol-error-rate (SER) performance of quadrature amplitude modulation (QAM) systems employing symmetric pulse-shaping square-root (SR) filters designed by minimizing the roughness function and by minimizing the peak-to-average power ratio (PAR). The device used in the experiments is the 'bladeRF' software-defined-radio platform. PAR is a well-known measurement, whereas the roughness function is a concept for measuring the jitter-induced interference. The experimental results show that the system employing minimum-roughness pulse-shaping SR filters outperforms the system employing minimum-PAR pulse-shaping SR filters in the sense of SER performance.

**Keywords:** pulse-shaping filters, FIR filters, jittering, QAM

Conference Title: ICCCIT 2016: International Conference on Communications, Control and Information Technology

**Conference Location :** Zurich, Switzerland **Conference Dates :** July 21-22, 2016