
I. INTRODUCTION

Introduction will go here
Example of citation by [1]

II. THRUST 1-PAR REDUCTION FOR SIGNAL AGGREGATION

When multiple signals are multiplexed, the aggregate signal will have a high probability of having a high peak-to-average power ratio (PAR) . This is a result of the Central Limit Theorem in that the sum distribution of the multiplexed signal approaches complex Gaussian. Having a high PAR means that the signal power is inefficient and prone to non-linear distortion from power amplifier. However, a multiplexed signals have more degrees of freedom for lowering the PAR .

For any linear modulated signal, the signal can be generalized as set of linear equations

$$y = Ax \tag{1}$$

where A is the linear modulation such as $A = I$ for single carrier, $A = H$ for Hadamard spreading (CDMA), $A = Q^H$ for OFDM, and ect.

In [2] something something

III. THRUST 2: SPATIAL SHAPING WITH NONLINEAR COMPONENTS

- A. *Detailed problem statement*
- B. *Analytical/Simulation Results*
- C. *Outlook and remaining work*

Thrust II stuff here

IV. THRUST 3

Thrust III stuff here

V. ADMINISTRATION

Administration section is here

REFERENCES

- [1] G. B. Postema, "Generation and Performance Analysis of Wideband Radar Waveforms," in *Proceedings of the International Conference on Radar*, London, UK, 1987, pp. 310–314.
- [2] S. H. Han and J. H. Lee, "An overview of peak-to-average power ratio reduction techniques for multicarrier transmission," *Wireless Communications, IEEE*, vol. 12, no. 2, pp. 56–65, April 2005.