

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Experimental studies of \mathcal{PT} -scattering in arrays of active LRC elements¹ ZIN LIN, JOSEPH SCHINDLER, HAMID RAMEZANI, FRED ELLIS, TSAMPIKOS KOTTOS, Wesleyan University, WAVE TRANSPORT IN COMPLEX SYSTEMS TEAM — One of the fundamental tasks in antenna theory is getting an antenna to radiate by removing mismatch losses between the loaded antenna and the transmission line that delivers the power. We will present experimental data suggesting that \mathcal{PT} -symmetric antenna structures, where active elements associated with the real part of impedance ($\pm R$) are involved, can lead to a broadband, reflectionless behavior. The suggested *optimal matching* strategy can potentially be superior to the existing one which uses active LC elements in order to balance the reactance. Along these lines, we also envision antenna arrangements with unidirectional ultra-fast communication capabilities, where the signal will transfer faster (or slower) between the active elements of the \mathcal{PT} -structure depending on the entrance point of the incident wave.

¹We acknowledge AFOSR No. FA 9550-10-1-0433 grant and a NSF ECCS-1128571 grant.

Zin Lin
Wesleyan University

Date submitted: 10 Nov 2011

Electronic form version 1.4