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Thang Huynh* (tlh007@ucsd.edu), tlh007@ucsd.edu. *Phase Retrieval: under Corruption or with Quantization.*

Phase Retrieval refers to a problem of recovering a signal from its phaseless measurements. It is a very challenging problem arising in many real-life applications, e.g. X-ray crystallography. The problem is even more difficult in the presence of corrupted measurements due to sensor failures or sensor saturation. In the first part of the talk, I will show that an ℓ_1 -version of the PhaseLift algorithm can successfully solve the phase retrieval problem with high probability despite an overwhelming number of outliers, provided that there are enough measurements. This is joint work with Paul Hand (Rice University).

Another of interest problem is how to quantize the phaseless measurements. For the second part of the talk, I will discuss how the distributed noise-shaping method of Chou and Gunturk can be extended to the quantization problem of phaseless measurements and will show that a suitably modified version of the PhaseLift algorithm guarantees near-optimal error performance. This is joint work with Sinan Gunturk (NYU) and Halyun Jeong (NYU). (Received September 15, 2016)