

This paper considers the phase retrieval problem in which measurements consist of only the magnitude of several linear measurements of the unknown, e.g., spectral components of a time sequence. We develop low-complexity algorithms with superior performance based on the majorization-minimization (MM) framework. The proposed algorithms are referred to as PRIME: Phase Retrieval via the Majorization-minimization technique. They are preferred to existing benchmark methods since at each iteration a simple surrogate problem is solved with a closed-form solution that monotonically decreases the original objective function. In total, three algorithms are proposed using different majorization-minimization techniques. Experimental results validate that our algorithms outperform existing methods in terms of successful recovery and mean-square error under various settings.