

Blind gain and phase calibration (BGPC) is a structured bilinear inverse problem, which arises in many applications, including inverse rendering in computational relighting (albedo estimation with unknown lighting), blind phase and gain calibration in sensor array processing, and multichannel blind deconvolution. The fundamental question of the uniqueness of the solutions to such problems has been addressed only recently. In a previous paper, we proposed studying the identifiability in bilinear inverse problems up to transformation groups. In particular, we studied several special cases of blind gain and phase calibration, including the cases of subspace and joint sparsity models on the signals, and gave sufficient and necessary conditions for identifiability up to certain transformation groups. However, there were gaps between the sample complexities in the sufficient conditions and the necessary conditions. In this paper, under a mild assumption that the signals and models are generic, we bridge the gaps by deriving tight sufficient conditions with optimal or near optimal sample complexities.