MAN-DUEN CHOI, Department of Mathematics, University of Toronto *Normal Dilations Made Simple but Difficult*

Which operators can be dilated to normal operators with some prescribed spectra? This turns out to be useful for the illustration of Naimark's theorem about the structure of a unital positive linear map from C(X) to B(H). Even in the finite dimensional cases, there are very hard problems of unknown depth in matrix analysis , related to the recent development of quantum information.