

# Contents

Chapter 1. Introduction	1
Chapter 2. Functional Models for Row-Isometric/Row-Unitary Operator Tuples	6
2.1. The classical case	6
2.2. Functional models of noncommutative formal power series	7
2.3. Hardy subspaces	13
2.4. Intertwining operators	17
Chapter 3. Cuntz Scattering Systems	35
3.1. Basic geometric structure of Cuntz scattering systems	35
3.2. The scattering function and models for Cuntz scattering systems	39
3.3. The colligation associated with a Cuntz scattering system	43
Chapter 4. Unitary Colligations	55
4.1. Preliminaries	55
4.2. The Cuntz scattering system associated with a unitary colligation $U$ and Cuntz weight $W_*$	61
Chapter 5. Scattering, Systems and Dilation Theory: the Cuntz-Toeplitz Setting	80
5.1. Outgoing Cuntz scattering systems	80
5.2. Cuntz unitary colligations and outgoing Cuntz scattering systems	84
5.3. Model theory for row contractions	88
5.4. Realization theory	95
Bibliography	99