

Contents

1	Introduction	5
1.1	Overcomplete Models and Sparse Solutions	5
1.2	Applications	6
2	State of the Art	7
2.1	Principle of Sparse Atomic Decomposition	7
2.2	Existing Methods	9
2.3	Basis Pursuit Method and Algorithm	9
2.4	BPA 4	12
3	Structure of Solution	13
3.1	Overcomplete Time Series Models	13
3.2	Overcomplete GLM	15
3.3	Overcomplete VARMA Model	16
4	Results and Conclusions	20
	References	22
	Curriculum Vitae	25
	Summary	28