Contents

1	Introduction			1
	1.1	Overv	iew	1
	1.2	.2 Measure theory		2
	1.3	3 Currents		
2	Multiscale simplicial flat norm			
	2.1	Introduction		
		2.1.1	Contributions	14
		2.1.2	Work on Related Problems	16
2.2 Definition o		Defini	tion of Simplicial Flat Norm	17
		2.2.1	Complexity of multiscale simplicial flat norm	21
2.3 Mul		Multis	scale Simplicial Flat Norm and Integer Linear Programming	
	2.4	Simplicial Complexes and Relative Torsion		
	2.5	2.5 Simplicial Deformation Theorem		29
		2.5.1	Proof of the Simplicial Deformation Theorem	31
		2.5.2	Comparison of Bounds of Approximation	43
		Computational Results		46
		Discus	ssion	49
3	Flat norm decomposition of integral currents			51
	3.1	Introd	luction	51
		3.1.1	Definitions	52
		3 1 2	Overview	54