

CONTENTS

	<u>Page</u>
Introduction.	i
Part I: Formal Theory and Computations.	1
1. Definition of deformations.	1
2. Iarrobino's example of a 0-dimensional scheme which is not a specialization of d distinct points.	4
3. The meaning of flatness in terms of relations.	7
4. Deformations of complete intersections.	11
5. The case of Cohen-Macaulay varieties of codimension 2 (Hilbert, Schaps).	16
6. First-order deformations of arbitrary X : Schlessinger's T^1	25
7. Versal deformations and Schlessinger's theorem.	34
8. Existence of formally versal deformations.	40
9. The case that X is normal.	46
10. Deformation of a quotient by a finite group action.	51
11. Deformation of cones.	52
12. Theorems of Pinkham and Schlessinger on deformation of cones.	60
13. Pinkham's computation for the cone over a rational curve in \mathbb{P}^n	67
Part II: Elkik's Theorems on Algebraization.	80
1. Solutions of systems of equations.	80
2. Existence of solutions when A is t -adically complete.	82
3. The case of a henselian pair $(A, \mathcal{O}_\mathcal{C})$	93
4. Tougeron's lemma.	100
5. Existence of algebraic deformations of isolated singularities.	104