Conference Board of the Mathematical Sciences

## **CBMS**

Regional Conference Series in Mathematics

Number 116

## Deformation Theory of Algebras and Their Diagrams

Martin Markl

Published for the

Conference Board of the Mathematical Sciences
by the



American Mathematical Society
Providence, Rhode Island
with support from the
National Science Foundation



## Contents

Preface		vii
Chapter	1. Basic notions	1
Chapter	2. Deformations and cohomology	19
Chapter	3. Finer structures of cohomology	25
Chapter	4. The gauge group	45
Chapter	5. The simplicial Maurer-Cartan space	55
Chapter	6. Strongly homotopy Lie algebras	69
Chapter	7. Homotopy invariance and quantization	75
Chapter	8. Brief introduction to operads	85
Chapter	9. $L_{\infty}$ -algebras governing deformations	. 99
Chapter	10. Examples	113
Index		121
Bibliogra	phy	