

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b><math>L_\infty</math>-algebras</b>	<b>3</b>
2.1	Generalizing differential graded Lie algebras . . . . .	3
2.2	$L_\infty$ -algebras as coalgebras with differentials . . . . .	6
2.3	Morphisms of $L_\infty$ -algebras . . . . .	17
2.4	Representations of $L_\infty$ -algebras . . . . .	23
2.5	Lie m-algebras . . . . .	25
<b>3</b>	<b>Observables of pre-n-plectic manifolds</b>	<b>29</b>
3.1	Generalizing symplectic manifolds . . . . .	29
<b>4</b>	<b>Symmetries of pre-n-plectic manifolds</b>	<b>34</b>
4.1	Weakly Hamiltonian group actions . . . . .	34
4.2	Strongly Hamiltonian group actions . . . . .	36
<b>A</b>	<b>Universal coalgebra properties</b>	<b>47</b>
<b>References</b>		<b>49</b>