

TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION AND MOTIVATION	1
1.1. Equations of the Hamilton-Jacobi type	1
1.2. Some more symplectic geometry	7
1.3. Some more mathematical physics	14
CHAPTER 2. SYMPLECTIC VECTOR SPACES	23
2.1. Symplectic vector spaces and their automorphisms . . .	23
2.2. Subspaces of symplectic vector spaces	30
2.3. Complex structures in real symplectic spaces	40
CHAPTER 3. SYMPLECTIC GEOMETRY ON MANIFOLDS	53
3.1. Symplectic vector bundles	53
3.2. Symplectic vector bundles of geometric structures . . .	59
3.3. Lagrangian subbundles	71
3.4. Local equivalence theorems in symplectic geometry . . .	83
CHAPTER 4. TRANSVERSALITY OBSTRUCTIONS OF LAGRANGIAN SUBBUNDLES (MASLOV CLASSES)	103
4.1. Connections on principal bundles	103
4.2. Secondary characteristic classes	113
4.3. The Maslov class and index	138
4.4. Maslov secondary characteristic classes	151
4.5. Computations in cotangent bundles	177
REFERENCES	207
INDEX	213