

Contents

Preface	xi
Addendum	xvii
Notation	xix
Chapter 1. Construction of the module of p -adic L -functions without factors at infinity	1
Summary	1
1.1. Notation	3
1.2. Study of some local Λ -modules	5
1.3. Galois cohomology	10
1.4. The module of p -adic L -functions (without factors at infinity)	13
Chapter 2. Modules of p -adic L -functions of V	19
Summary	19
2.1. Γ -factors.	21
2.2. The module of p -adic L -functions	27
2.3. Some properties	29
2.4. Relations with the usual characteristic series and examples	30
2.5. The functional equation	36
Chapter 3. Values of the module of p -adic L -functions	41
Summary	41
3.1. p -adic periods	43
3.2. Examples and special cases	50
3.3. Multiplicity of the zero (first form)	52
3.4. Multiplicity of the zero (second form)	57
3.5. Special values and periods	67
3.6. Special values	71
Chapter 4. The p -adic L -function of a motive	79
Summary	79
4.1. Background	81
4.2. Conjectural definition of the p -adic L -function of a motive	85
4.3. Remarks and examples	90
4.4. Special elements	106
4.5. Continuity	111
Appendix A. Results in Galois cohomology	115
A.1. Galois cohomology	115

A.2. Local Iwasawa theory: first results	118
A.3. Poitou-Tate exact sequences	121
A.4. Iwasawa theory and twists	123
Appendix B. The weak Leopoldt conjecture	125
Appendix C. Local Tamagawa numbers and Euler-Poincaré characteristic. Application to the functional equation.	131
Summary	131
C.1. Local factors and ϵ factors: the non-Archimedean case	133
C.2. Local Euler-Poincaré characteristic	135
C.3. Compatibility of the Bloch-Kato conjectures with the functional equation	140
Bibliography	143
Index	147