
Contents

Preface	vii
<i>Gisbert Wüstholz</i>	
1 Introduction	1
2 Local Shimura Varieties: Minicourse Given by Peter Scholze	7
<i>Sergey Gorchinskiy and Lars Kühne</i>	
2.1 Introduction	7
2.2 Local Langlands Correspondence	12
2.3 Approach to LLC via Lubin-Tate Spaces	13
2.4 Approach to LLC via Rapoport-Zink Spaces	21
2.5 Some Basics of p -adic Geometry	34
2.6 Approach to LLC via Fargues-Fontaine Curve	44
Bibliography	52
3 Hyperelliptic Continued Fractions and Generalized Jacobians: Minicourse Given by Umberto Zannier	56
<i>Laura Capuano, Peter Jossen, Christina Karolus, and Francesco Veneziano</i>	
3.1 Introduction and Some History	56
3.2 The Continued Fraction Expansion of Real Numbers	59
3.3 Continued Fractions in More General Settings	63
3.4 The Continued Fraction Expansion of Laurent Series	68
3.5 Pell Equation in Polynomials	73
3.6 Distribution of Pellian Polynomials	78
3.7 The Pell Equation in the Nonsquarefree Case	82
3.8 A Skolem-Mahler-Lech Theorem for Algebraic Groups	85
3.9 Periodicity of the Degrees of the Partial Quotients	88
3.10 Solutions to the Exercises	94
Bibliography	98
4 Faltings Heights and L-functions: Minicourse Given by Shou-Wu Zhang	102
<i>Ziyang Gao, Rafael von Känel, and Lucia Mocz</i>	
4.1 Heights and L -functions	103

4.2	Shimura Curves and Averaged Colmez Conjecture	114
4.3	The Generalized Chowla-Selberg Formula	141
4.4	Higher Chowla-Selberg/Gross-Zagier Formula	150
	Bibliography	171
	List of Contributors	175