Abstract

The classification of the local Galois representations using (ϕ, Γ)-modules by Fontaine has been generalized by Kisin and Ren over the Lubin-Tate extensions of local fields using the theory of (ϕq, ; LT)-modules. In this thesis, we extend the work of (Fontaine) Herr by introducing a complex which allows us to compute co homology over the Lubin-Tate extensions and compare it with the Galois cohomol ogy groups. We further extend that complex to include certain non-abelian exten sions. We then deduce some relations of this cohomology with those arising from (ψq, ; LT)-modules. We also compute the Iwasawa cohomology over the Lubin Tate extensions in terms of ψq-operator acting on étale (ϕq, ; LT)-module attached to the local Galois representation. Moreover, we generalize the notion of (ϕq, ; LT)- modules over the coefficient ring R and show that the equivalence given by Kisin and Ren extends to the Galois representations over R. This equivalence allows us to generalize our results to the case of coefficient rings.