Bryden Cais: **On F-crystalline representations**

For a p-adic field K, the theory of Kisin modules provides a powerful classification of Galois stable lattices in Q_p-valued representations of G_K. Throughout Kisin's theory, the non-Galois "Kummer" extension K_{\infty}/K obtained by adjoining to K a compatible system of p-power roots of a uniformizer plays a central role. We describe a generalization of Kisin's theory allowing arbitrary (p-adic) coefficient fields and more general Frobenius lifts in which the role of K_{infty} is replaced by a general iterated extension. As an application, we describe a class of infinite and totally wildly ramified extensions L of K for which restriction of G_K-representations to G_L-representations is fully-faithful on F-crystalline representations. This is joint work with TONG LIU.