1163-11-946   **Caroline L Matson*** (`caroline.matson@colorado.edu`). *Ramified abelian extensions of p-adic fields via formal groups.*

Let p be a prime integer and let F be a formal group law over the field of p-adic rational numbers, $\mathbb{Q}_p$. For $n \geq 1$ we obtain a field extension $K_n/\mathbb{Q}_p$ by adjoining the roots of the multiplication-by-p^n endomorphism $[p^n]_F$ to the ground field $\mathbb{Q}_p$. We can study the ramification degree of K_n by determining the p-adic valuations of the roots of $[p^n]_F$. In dimension one, this can be accomplished using Newton polygons. In multiple dimensions we can use similar techniques to compute the valuations of the roots of $[p^n]_F$, ultimately reducing to a question of whether two certain polynomials in p share any integer factors. (Received September 14, 2020)