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Abstract:

Wildely ramified power series (WRP) are power series tangent to the identity defined over fields of positive characteristic. The ramification numbers of a WRP $f(x)$ are defined as the multiplicity of zero as fixed point of iterates of the f^n . Since a classical theorem of Shakar Sen in 1969, called Sen's theorem, ramification numbers have been studied by various authors including Winterberger, Keating, Laubie, Saïn, Lubin and Li. Even if much is known about the possible sequences of ramification numbers relatively little is known about concrete series having a prescribed sequence of ramification numbers. In this talk we discuss a recent joint result with Rivera-Letelier on the classification of minimally ramified power series. We also discuss connections between ramification numbers and arithmetical dynamical systems (ADS) generated by the iteration of power series defined over valued number fields such as the rational numbers and their algebraic extensions. In particular, connections related to conjugacy invariants and the geometric location of periodic points in ADS.