Michael Herman and P–J Yoccoz prove that every power series $f(T) = \lambda T + \sum_{i=2}^{\infty} a_i T^i \in \mathbb{Q}_p[[T]]$ such that $|\lambda| = 1$ and $\lambda$ is not a root of unity is linearizable. They asked the same question for polynomials over $\mathbb{F}_p[[T]]$, a completed discrete valuation ring of positive characteristic.

In this paper, we prove that, on the opposite, most such polynomials in this case are more likely to be non-linearizable. More precisely, we give a sufficient condition of a polynomial in this form being linearizable. In particular, we prove that any polynomial of the form $\lambda T + a_2 T^2 + a_p T^p$ is not linearizable.