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On some problems in Matsuda monoids

Let F be a field and M be a commutative, torsion-free, cancellative monoid. Let $F[X;M]$ denote the ring of all polynomials with coefficients in F and exponents in M. We say that M is a Matsuda monoid if for every indivisible element α in M, the polynomial $X^\alpha - 1$ is irreducible in $F[X;M]$ for any field F. In this talk, we will discuss recent work on Matsuda monoids that leads to questions in analytic number theory.