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Brandon Alberts*, bralberts@ucsd.edu. *Counting Abelian Extensions with Power Savings*. Preliminary report.

Let $D(s)$ be the generating Dirichlet series of a multiplicative function, so that it has an Euler product. If the Euler factors are polynomials in p^{-s} and $ho(mFr_p)$ for some collection of 1-dimensional Galois representations ho , we construct a meromorphic continuation of $D(s)$ to the right half-plane $mRe(s) > 0$. We also prove that, for a fixed abelian group A and number field K , the generating series of A -extensions over K is a finite sum of Euler products with this property. This allows us to prove power savings on the number of A -extension of K with discriminant bounded by X . (Received January 24, 2022)