

EXPLICIT AVERAGE ORDERS: SOME NEWS AND SOME PROBLEMS

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ABSTRACT: In order to get fully explicit result in multiplicative number theory, explicit estimates concerning average orders are required. The quantity to be averaged can be sorted in three classes:

- Estimates for the primes,
- Estimates for non-negative multiplicative functions,
- Estimates for oscillating multiplicative functions.

The first of these items have been studied extensively, while decent work exists concerning the second one. We consider here mainly the third item, which also has implication on the second one. We will present work that bypass the Perron formula, together with several problems that are still open, like finding a decent lower bound for the absolute value of the Riemann zeta-function in a zero-free region.