

## ON THE PARABOLIC PARTITIONS OF A NUMBER

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ABSTRACT: We solve the enumeration of the set  $PP(n)$  of partitions of  $n$  in which the nondecreasing sequence of parts  $p(1), p(2), \dots, p(d)$  are contained in a degree-2 polynomial  $p(x) \in \mathbb{Q}[x]$ . In particular, we prove a formula for the cardinality of this set. We also present an explicit method to calculate all the partitions of  $PP(n)$ . This talk generalizes the problem of the partition of a number into arithmetic progressions and the solution that we propose is based on [1, 2].

- [1] F. J. de Vega, An extension of Furstenberg's theorem of the infinitude of primes, *JP J. Algebra Number Theory Appl.* **53(1)** (2022), 21–43.
- [2] F. J. de Vega, A complete solution of the partition of a number into arithmetic progressions, *JP J. Algebra Number Theory Appl.* **53(2)** (2022), 109–122.

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