

ALMOST SYMMETRIC ARF \mathcal{C} -SEMIGROUPS AND PARTITIONS

NESRİN TUTAŞ

(*Joint work with N. Gümüşbaşı and H.İ. Karakaş*)

Several numerical semigroup families have been investigated up to now. Arf semigroups, one of the well-known families, were introduced by Cahit Arf, and many authors studied their properties.

In recent years, Rosales and Branco introduced the concept of \mathcal{C} -semigroup (Rosales J.C. and Branco M.B. Numerical Semigroups Closed Under Addition of Their Divisors. *Applicable Algebra in Engineering, Communication and Computing*, 32: 665-680, 2021.)

An Arf partition of a positive integer is described depending on the behavior of an Arf semigroup (Tutaş N., Karakaş H.İ., and Gümüşbaşı N. Young Tableaux and Arf Partitions. *Turkish Journal of Mathematics*, 43(1): 448–459, 2019). Almost symmetric Arf semigroups and partitions are studied in (Gümüşbaşı N., Tutaş N., and Er N. Almost Symmetric Arf Partitions. *Turkish Journal of Mathematics*, 44: 2185–2198, 2020).

In this work, we exhibit properties of almost symmetric Arf \mathcal{C} -semigroups, and almost symmetric Arf \mathcal{C} -partitions of a positive integer. We give a formula for the number of almost symmetric Arf \mathcal{C} -partitions of a positive integer, and also a formula for the number of almost symmetric Arf \mathcal{C} -semigroups with conductor C for any positive integer C . We characterize almost symmetric Arf \mathcal{C} -semigroups in terms of their Kunz coordinates.

DEPARTMENT OF MATHEMATICS, AKDENİZ UNIVERSITY, 07058, ANTALYA, TURKEY

Email address: `ntutas@akdeniz.edu.tr`