



ÇANKAYA UNIVERSITY  
FACULTY OF ARTS AND SCIENCES  
DEPARTMENT OF MATHEMATICS

## SEMINAR

### “Growth of Algebras”

**SPEAKER** : Dr. Dilber Koçak

**DATE** : 15 December , 2017

**TIME** : 14:20

**PLACE** : Çankaya University (Central Campus), R-213

**ABSTRACT** : Let  $A$  be an (not necessarily associative) algebra over a field  $k$  generated by a finite set  $X$ . The growth function of  $A$  with respect to  $X$  is defined as the dimension of the subspace of  $A$  spanned by all monomials on  $X$  of length at most  $n$ . The asymptotic behavior of this function does not depend on the generating set  $X$  and it is called the growth of  $A$ . The growth rate is a widely studied invariant for finitely generated algebraic structures such as algebras, groups, semigroups. This talk will be a survey of history, open problems and some new results around this notion. The main focus will be on finitely presented algebras whose growth is intermediate between polynomial and exponential.

**All interested are cordially invited.**

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