Second Workshop on Algebra and its Applications
August 31–September 01, 2012, University of Mohaghegh Ardabili

On Graphs Attached to Commutative Rings

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Let R be a commutative ring with nonzero identity, and let $Z(R)$ be its set of zero-divisors. In this talk, we discuss (briefly) various types of graphs attached to the ring R, (i.e. zero-divisor graph and its generalization). In particular, the generalized total graph of the ring R will be studied extensively. The zero-divisor graph of R is the (undirected) graph with vertices $Z(R) - \{0\}$, and two distinct vertices x and y are adjacent if and only if $xy = 0$. The total graph of R is the (undirected) graph with vertices all elements of R, and two distinct vertices x and y are adjacent if and only if $x + y \in Z(R)$. In this talk, we will focus on a generalization of the total graph of the ring R.

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