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The triangular line n -sigraph of a symmetric n -sigraph. (English) Zbl 1213.05120
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Summary: An n -tuple (a_1, a_2, \dots, a_n) is symmetric, if $a_k = a_{n-k+1}$, $1 \leq k \leq n$. Let

$$H_n = \{(a_1, a_2, \dots, a_n) : a_k \in \{+, -\}, a_k = a_{n-k+1}, 1 \leq k \leq n\}$$

be the set of all symmetric n -tuples. A symmetric n -sigraph (symmetric n -marked graph) is an ordered pair $S_n = (G, \sigma)$ ($S_n = (G, \mu)$), where $G = (V, E)$ is a graph called the underlying graph of S_n and $\sigma : E \rightarrow H_n$ ($\mu : V \rightarrow H_n$) is a function. Analogous to the concept of the triangular line graph of a graph, the triangle line symmetric n -sigraph of a symmetric n -sigraph is defined. It is shown that for any symmetric n -sigraph S_n , its triangular line symmetric n -sigraph is i -balanced. We then give structural characterization of triangular line symmetric n -sigraphs. Further, we obtain some switching equivalence relationship between triangular line symmetric n -sigraph and line symmetric n -sigraph.

MSC:

05C22 Signed and weighted graphs

Keywords:

symmetric n -sigraphs; symmetric metric n -marked graphs; balance; switching; triangle line symmetric n -sigraphs; line symmetric n -sigraphs; complementation