

# THE TIGHT UPPER BOUND FOR THE NUMBER OF MATCHINGS OF $(N, N+2)$ -GRAPHS

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A connected  $(n, n + 2)$ -graph is a connected graph with  $n$  vertices and  $n + 2$  edges. In order to have a connected simple  $(n, n + 2)$ -graph, it will be necessary to assume that  $n \geq 4$ . In this paper we determine the tight upper bound for the number of matchings of the connected simple  $(n, n + 2)$ -graphs. Then for each  $n \geq 4$  we characterize the connected simple  $(n, n + 2)$ -graph(s) for which the bound is best possible.

**Keywords:** Matching, Fibonacci number, Hosoya index,  $(n, n + 2)$ -graph, connected graph..

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