Abstract Submitted
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A New Algorithm Development on the Frequency Analysis RICHARD KYUNG, CRG, EUGENE LEE, Stuyvesant HS — A numerical algorithm to analyze the frequencies of beam structures is developed based on mode synthesis method. The physical domains are assumed to be composed of group of sub-domains or components that are interconnected with each other. After reducing the degrees of freedom of each element by means of the new algorithm, natural mode shapes of each of the components are found. The dynamic characteristics obtained are combined into a complete domain. The effects of dividing for the domain and the number of modes adopted in the interface region are also taken into consideration. The results are compared to those from the commercial program that can carry out modal analysis such ANSYS. The proposed algorithm is applied to the domains with a large number of sub-domains, and the results show numerical efficiency over the classical modal analysis.

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