Corrugated membrane performance analysis in nonlinear deformation process

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Corrugated membranes are widely used in instrument-making as elastic elements. Devices reliability and quality depend on the accuracy of elastic elements calculation. So, corrugated membranes calculation is the problem of current interest. We used parameter continuation and parameter subspace change methods for corrugated membranes calculation. The algorithm is implemented in C program. The membrane elastic characteristic and deformed shape of its meridian are the results of the calculation. The isolated elastic characteristic curve calculation algorithm is shown as well. Thus, the proposed calculation technique appears to be effective and can be recommended for the analysis of a wide range of elastic elements.

Keywords: *elastic element, thin-walled shell, large changes, nonlinear deformation.*

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