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Selected Publications:

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K. C. Park, G. M. Stanley and D. L. Flaggs (Applied Mechanics Laboratory, Lockheed Palo Alto Research Laboratory, Palo Alto, CA 94304, U.S.A.), “A uniformly reduced, four-noded C0-shell element with consistent rank corrections”, Computers & Structures, Vol. 20, Nos. 1-3, 1985, pp. 129-139, doi:10.1016/0045-7949(85)90062-8
ABSTRACT: An analysis of four-noded C0-shell elements is presented that assesses their ability to represent the membrane-bending coupling phenomena in the governing shell equations by facet approximations. It is shown that four-noded shell elements can capture the predominant coupling phenomena consistent with the classical assumptions invoked in the first-order linear shell theories. Encouraged by this ability, a new four-noded C0-shell element is presented that employs only one-point spatial integration rule. The inevitable spurious mechanisms resulting from reduced integration are compensated for by a systematic rank-correction technique that was previously developed for a plate-bending element. The element is applied to classical cylindrical buckling problems with encouraging results.

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