Friedrich Gruttmann

List of Publications by Year
in descending order

60 papers	2,411 citations	201674 27 h-index	197818 49 g-index
62 all docs	62 docs citations	62 times ranked	945 citing authors

#	Article	IF	Citations
1	A 4-node finite shell element for the implementation of general hyperelastic 3D-elasticity at finite strains. Computer Methods in Applied Mechanics and Engineering, 1996, 130, 57-79.	6.6	216
2	A continuum based three-dimensional shell element for laminated structures. Computers and Structures, 1999, 71, 43-62.	4.4	189
3	Shear correction factors in Timoshenko's beam theory for arbitrary shaped cross-sections. Computational Mechanics, 2001, 27, 199-207.	4.0	188
4	A robust non-linear solid shell element based on a mixed variational formulation. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 179-201.	6.6	142
5	Theory and numerics of three-dimensional beams with elastoplastic material behaviour. International Journal for Numerical Methods in Engineering, 2000, 48, 1675-1702.	2.8	130
6	Theory and finite element formulation of rubberlike membrane shells using principal stretches. International Journal for Numerical Methods in Engineering, 1992, 35, 1111-1126.	2.8	116
7	A robust non-linear mixed hybrid quadrilateral shell element. International Journal for Numerical Methods in Engineering, 2005, 64, 635-666.	2.8	107
8	Thin shells with finite rotations formulated in biot stresses: Theory and finite element formulation. International Journal for Numerical Methods in Engineering, 1993, 36, 2049-2071.	2.8	80
9	Shear stresses in prismatic beams with arbitrary cross-sections. International Journal for Numerical Methods in Engineering, 1999, 45, 865-889.	2.8	80
10	A simple orthotropic finite elasto-plasticity model based on generalized stress-strain measures. Computational Mechanics, 2002, 30, 48-64.	4.0	77
11	Elastoplastic orthotropy at finite strains: multiplicative formulation and numerical implementation. Computational Materials Science, 2003, 28, 732-742.	3.0	74
12	A geometrical nonlinear eccentric 3D-beam element with arbitrary cross-sections. Computer Methods in Applied Mechanics and Engineering, 1998, 160, 383-400.	6.6	64
13	A mixed shell formulation accounting for thickness strains and finite strain 3d material models. International Journal for Numerical Methods in Engineering, 2008, 74, 945-970.	2.8	63
14	Structural analysis of composite laminates using a mixed hybrid shell element. Computational Mechanics, 2006, 37, 479-497.	4.0	62
15	A linear quadrilateral shell element with fast stiffness computation. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 4279-4300.	6.6	56
16	A simple finite rotation formulation for composite shell elements. Engineering Computations, 1994, 11, 145-176.	1.4	47
17	A stabilized one-point integrated quadrilateral Reissner-Mindlin plate element. International Journal for Numerical Methods in Engineering, 2004, 61, 2273-2295.	2.8	46
18	A coupled twoâ€scale shell model with applications to layered structures. International Journal for Numerical Methods in Engineering, 2013, 94, 1233-1254.	2.8	46

#	Article	IF	Citations
19	Delamination growth analysis in laminated structures with continuum-based 3D-shell elements and a viscoplastic softening model. Computer Methods in Applied Mechanics and Engineering, 2000, 185, 123-139.	6.6	45
20	Finite element analysis of Saintâ€“Venant torsion problem with exact integration of the elasticâ€“plastic constitutive equations. Computer Methods in Applied Mechanics and Engineering, 2001, 190, 3831-3848.	6.6	36
21	A finite element formulation for the simulation of propagating delaminations in layered composite structures. International Journal for Numerical Methods in Engineering, 2001, 51, 1337-1359.	2.8	36
22	A mixed hybrid finite beam element with an interface to arbitrary three-dimensional material models. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2053-2066.	6.6	35
23	A nonlinear Huâ€“Washizu variational formulation and related finite-element implementation for spatial beams with arbitrary moderate thick cross-sections. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1671-1690.	6.6	33
24	Elastic and plastic analysis of thin-walled structures using improved hexahedral elements. Computers and Structures, 2002, 80, 857-869.	4.4	32
25	A nonlinear composite shell element with continuous interlaminar shear stresses. Computational Mechanics, 1993, 13, 175-188.	4.0	29
26	A nonlinear quadrilateral shell element with drilling degrees of freedom. Archive of Applied Mechanics, 1992, 62, 474-486.	2.2	28
27	On the numerical analysis of local effects in composite structures. Composite Structures, 1994, 29, 1-12.	5.8	28
28	A displacement method for the analysis of flexural shear stresses in thin-walled isotropic composite beams. Computers and Structures, 2002, 80, 1843-1851.	4.4	28
29	Analysis of thin shells using anisotropic polyconvex energy densities. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1015-1032.	6.6	28
30	Four-node Huâ€“Washizu elements based on skew coordinates and contravariant assumed strain. Computers and Structures, 2010, 88, 1278-1284.	4.4	27
31	A consistent finite element formulation of nonlinear membrane shell theory with particular reference to elastic rubberlike material. Finite Elements in Analysis and Design, 1993, 13, 75-86.	3.2	24
32	Shear correction factors for layered plates and shells. Computational Mechanics, 2017, 59, 129-146.	4.0	23
33	Coupling of two- and three-dimensional composite shell elements in linear and non-linear applications. Computer Methods in Applied Mechanics and Engineering, 1996, 129, 271-287.	6.6	21
34	An enhanced FSDT model for the calculation of interlaminar shear stresses in composite plate structures. Computational Mechanics, 2009, 44, 765-776.	4.0	18
35	Application of generalized measures to an orthotropic finite elasto-plasticity model. Computational Materials Science, 2003, 28, 696-703.	3.0	17
36	Nonlinear two-scale shell modeling of sandwiches with a comb-like core. Composite Structures, 2016, 144, 147-155.	5.8	15

#	Article	IF	Citations
37	Theory and numerics of layered shells with variationally embedded interlaminar stresses. Computer Methods in Applied Mechanics and Engineering, 2017, 326, 713-738.	6.6	15
38	Homogenization assumptions for coupled multiscale analysis of structural elements: beam kinematics. Computational Mechanics, 2020, 65, 635-661.	4.0	15
39	Squaring the circle â€" A curious phenomenon of fcc single crystals in spherical microindentation. Computational Materials Science, 2007, 39, 172-178.	3.0	11
40	A coupled globalâ€"local shell model with continuous interlaminar shear stresses. Computational Mechanics, 2016, 57, 237-255.	4.0	10
41	Tafeln der TorsionskenngrÃ¶ÃŸen von Walzprofilen unter Verwendung von FE-Diskretisierungen. Stahlbau, 1999, 68, 102-111.	0.1	9
42	An improved quadrilateral shell element based on the Huâ€"Washizu functional. Advanced Modeling and Simulation in Engineering Sciences, 2020, 7, .	1.7	9
43	An advanced shell model for the analysis of geometrical and material nonlinear shells. Computational Mechanics, 2020, 66, 1353-1376.	4.0	7
44	Construction of anisotropic polyconvex energies and applications to thin shells. Computational Materials Science, 2009, 46, 639-641.	3.0	6
45	A shell element for the prediction of residual load carrying capacities due to delamination. International Journal for Numerical Methods in Engineering, 2018, 118, 132.	2.8	5
46	Genaue Berechnung der elastischen Grenzmomente von Walzprofilen bei Torsionsbelastung. Stahlbau, 2002, 71, 803-814.	0.1	3
47	Coupled multiscale finite element analysis of shell structures. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 187-188.	0.2	2
48	On an improved 3D stress analysis for elastic composite shells. Computers and Structures, 2020, 231, 106172.	4.4	2
49	A layered shell element for the computation of interlaminar shear stresses and thickness normal stresses. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 323-324.	0.2	1
50	On boundary conditions and constraints for representative volume elements of a twoâ€scale shell formulation. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900123.	0.2	1
51	Delamination growth analysis of composite panels. Revue Europeenne Des Elements, 2004, 13, 915-929.	0.1	0
52	Computation of the Three-Dimensional Stress State in Composite Shell Structures with Mixed Finite Elements. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 217-218.	0.2	0
53	Hochbelastbare CFK-Biege- und CFK-QuerkrafttrÃger: Nichtlineare Finite-Elemente-Analyse zu Traglast- und StabilitÃtsuntersuchungen von KastentrÃgern. Stahlbau, 2013, 82, 464-469.	0.1	0
54	A coupled two-scale shell model for comb-like sandwich structures. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 451-452.	0.2	0

#	Article	IF	Citations
55	Multi-scale modeling of beam-like structures: A new boundary condition concept for the RVE. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 455-456.	0.2	0
56	A three-dimensional progressive damage model for fiber reinforced composites with an implicit-explicit integration scheme. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 139-140.	0.2	0
57	Comparison between substructure and FE2 modeling of beam-like structures. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 321-322.	0.2	0
58	A first order homogenization approach for structural elements: Beam kinematics. Proceedings in Applied Mathematics and Mechanics, 2019, 19, e201900181.	0.2	0
59	Ein neues FE-Modell zur Berechnung von geschichteten Platten mit kontinuierlichen interlaminaren Schubspannungen/A new FEâ€“model for the computation of layered plates with continuous interlaminar transverse shear stresses. Bauingenieur, 2016, 91, 179-187.	0.1	0
60	Evolution of Failure Mechanisms in Composite Shell Structures Using Different Models. Lecture Notes in Applied and Computational Mechanics, 2018, , 3-21.	2.2	0