



Professor Lázló P. Kollár

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Department of Strength of Materials and Structures
Technical University of Budapest

Education:

Technical University of Budapest Dipl. of Civil Eng. 1982
Technical University of Budapest Dipl. of Engineering Mathematics 1986
Hungarian Academy of Sciences Candidate Degree 1986, (Ph.D.)
Hungarian Academy of Sciences Doctor of Sciences 1995, (D.Sc.)
Technical University of Budapest Dr. Habil, 1996

Experience:

President of OTKA – The Hungarian Scientific Research Fund 2009 –
Chair of the Science and Engineering Board, Hungarian Science Foundation (2002-2008)
Vice-President of ESCM – The European Society on Composite Materials
Technical University of Budapest Professor 1997-
Associate Professor (with tenure) 1993-1997
Senior Scientific Associate 1990-93 (equ. Assoc. Prof. without tenure)
Scientific Associate 1989-90
Assistant 1986-89
Scholar 1983-86

Bridge Design Bureau, Budapest Design Engineer 1982-83
Department of Civil Engineering, Visiting Scholar 1988 Catholic University of Leuven, Belgium
Department of Aeronautics and Visiting Scholar 1990-91 Astronautics, Stanford University Visiting Associate Professor 1992-93
Department of Civil and Eng, Engineering, Stanford University Visiting Professor 1997-98

Honors and Awards:

1990 Korányi Imre Fellowship for ten months stay in the USA. (One awarded each year.)
1997 Széchenyi Professor Fellowship
2001 Correspondent member of the Hungarian Academy of Sciences

Professional Membership:

American Concrete Institute
Structural Stability Research Council (member at large, task group: doubly curved shells)
Editorial Board, Journal of Reinforced Plastics and Composites
Secretary of the task group of the Hungarian Academy of Sciences: Applied Mechanics
European Association of Earthquake Engineering, Secretary of the Hungarian Committee

Publications:

(“F” Refereed Journals in English and German):

- F1. Hegedűs, I. and Kollár, L. P. : Buckling of sandwich columns with thin faces under distributed normal loads. *Acta Technica Hungarica*. 97. (1984), 111-122.
- F2. Hegedűs, I. and Kollár, L. P. : Buckling of sandwich columns with thick faces subjected to axial loads of arbitrary distribution. *Acta Technica Hungarica*. 97. (1984), 123-132.
- F3. Kollár, L. P.: Die paradoxe Abnahme der Tragfähigkeit infolge Verstärkung des Querschnittes. *Bautechnik*. 62. (1985), 264-270.
- F4. Kollár, L. P. : Buckling analysis of coupled shearwalls by the multi-layer sandwich model. *Acta Technica Hungarica*. 99. (1986), 317-332.
- F5. Hegedűs, I. and Kollár, L. P. : Stabilitätsuntersuchung von Rahmen und Wandscheiben mit der Sandwichtheorie. *Bautechnik*. 64. (1987), 420-425.
- F6. Hegedűs, I. and Kollár, L. P. : Stability analysis of bars elastically restrained from rotation along their entire length. *Acta Technica Hungarica, Civil Engineering*. 101. (1988), 57-65.
- F7. Hegedűs, I. and Kollár, L. P. : Generalized bar models and their physical interpretation. *Acta Technica Hungarica, Civil Engineering*. 101. (1988), 67-93.
- F8. Hegedűs, I. and Kollár, L. P. : Wrinkling of faces of sandwich bars and its interaction with overall instability. *Acta Technica Hungarica, Civil Engineering*. 102./1, (1989), 49-63.
- F9. Kollár, L. P. : Postbuckling Behavior of Structures Having Infinitely Great Critical Load. *Mechanics of Structures and Machines*. (formerly *Journal of Structural Mechanics*). 18./1, (1990), 17-31.
- F10. Hegedűs, I. and Kollár, L. P. : Buckling of mirror-symmetrical plane structures under non-symmetrical loads. *Mechanics of Structures and Machines*. 18./4, (1990), 529-542.
- F11. Kollár, L. P. : Buckling of Generally Anisotropic (Aeolotropic) Shallow Shells. *Acta Technica Hungarica*. 103. (1990), 171-189.
- F12. Kollár, L. P. : Buckling of generally anisotropic shallow sandwich shells. *Journal of Reinforced Plastics and Composites*. 9. (1990), 549-568.

- F13. Csákány, A., Hegedûs, I. and Kollár, L. P. : Cone Shell Calculations. (Computerizable Method for Calculation of Complex Shells of Revolution.) Acta Technica Hungarica, Civil Engineering. 104. (1991/92), 3-38.
- F14. Kollár, L. P.: Calculation of Plane Frames braced by Shear Walls for Seismic Load. Acta Technica Hungarica, Civil Engineering. 104. (1991/92), 187-209.
- F15. Kollár, L. P. and Springer, G. S.: Stress Analysis of Anisotropic Laminated Cylinders and Cylindrical Segments. International Journal of Solids and Structures. 29. (1992), 1499-1517.
- F16. Kollár, L. P., Patterson, J. M., and Springer, G. S.: Composite Cylinders Subjected to Hygrothermal and Mechanical Loads. International Journal of Solids and Structures. 29. (1992), 1519-1534.
- F17. Kollár, L. P. and Patterson, J. M. : Composite Cylindrical Segments Subjected to Hygrothermal and Mechanical Loads. International Journal of Solids and Structures. 30. (1993), 2525-2545.
- F18. Kollár, L. P. : Three Dimensional Analysis of Composite Cylinders Under Axially Varying Hygrothermal and Mechanical Loads. International Journal of Computers and Structures. 50/4. (1994), pp 525-540.
- F19. Kollár, L. P., Springer, G. S., McColskey, D. and Spingarn, J. : Failures of axially loaded composite cylinders. Journal of Reinforced Plastics and Composites. 12. (1993), 1070-1080.
- F20. Kim, K. S., Kollár, L. P. and Springer, G. S., : A Model of Embedded Fiber Optic Fabry-Perot Temperature and Strain Sensors. Journal of Composite Materials. 27. (1993), 1618-1662.
- F21. Koconis, D. B., Kollár, L. P. and Springer, G. S. : Shape Control of Composite Plates and Shells with Embedded Actuators. I.Voltages Specified. Journal of Composite Materials. 28.-5 (1994), 415-458.
- F22. Koconis, D. B., Kollár, L. P. and Springer, G. S. : Shape Control of Composite Plates and Shells with Embedded Actuators. II.Desired Shape Specified. Journal of Composite Materials. 28.-5 (1994) 459-482.
- F23. Kollár, L. P. : Approximate Analysis of Temperature Induced Stresses and Deformations in Composite Shells. Journal of Composite Materials. 28.-5 (1994) 392-414.
- F24. Kollár, L. P.: Buckling of anisotropic cylinders. Journal of Reinforced Plastics and Composites. 13.-11 (1994), 954-975.
- F25. Kollár, L. P.: Buckling of isotropic and orthotropic cylinders under induced moments. International Journal of Solids and Structures. 34. (1997), 1915-1923.
- F26. Kollár, L.P. and R. Van Steenkiste : Calculation of the stresses and strains in embedded fiber optic sensors. Journal of Composite Materials. 32. (1998) 1647-1679.
- F27. R. Van Steenkiste and László P. Kollár: Effect of the coating on the stresses and strains in an embedded fiber optic sensor. Journal of Composite Materials. 32. (1998) 1680-1711.
- F28. Köpecsiri, A. and László P. Kollár: Approximate Analysis of Tall Building Structures for Earthquake using Timoshenko Beams. Periodica Polytechnica. 42. (1998) 139-162.
- F29. Jai, J., Springer, G.S., Kollár, L.P. and H. Krawinkler : Reinforcing Masonry Walls with Composite Materials - Model. Journal of Composite Materials. 34. 1548-1581, 2000
- F30. Jai, J., Springer, G.S., Kollár, L.P. and H. Krawinkler : Reinforcing Masonry Walls with Composite Materials - Test Results. Journal of Composite Materials. 34. 1369-1381, 2000
- F31. Köpecsiri, A. and L. P. Kollár: Approximate Seismic Analysis of Building Structures by the Continuum Method. Acta Technica Hungarica, Civil Engineering. (1999), (Accepted for publication.)
- F32. Köpecsiri, A. and L. P. Kollár: Simple formulas for the Analysis of Symmetric (Plane) Bracing Systems Subjected to Earthquakes. Acta Technica Hungarica, Civil Engineering. (1999), (Accepted for publication.)
- F33. Potzta, Gabriella and L.P. Kollar: Approximate calculation of the first period of vibration of building structures with varying stiffnesses. Acta Technica Hungarica, Civil Engineering. (1999), (Accepted for publication.)
- F34. Nordt, A.A., Springer, G.S. and L.P. Kollár: Computing the Mechanical Properties of Alpine Skis. "Sports Engineering" (1999), 2. 65-84

- F35. Nordt, A.A., Springer, G.S. and L.P. Kollár: Simulation of a Turn of Alpine Skis. "Sports Engineering" (1999), 2. 181-199
- F36. Veres, I.A. and L.P. Kollár: Approximate analysis of rectangular composite plates. . "International J. of Composite Materials" (2002), 36 (6), 673-684.
- F37. Veres, I.A. and L.P. Kollár: Buckling of rectangular orthotropic plates subjected to biaxial loads. "International J. of Composite Materials" (2001), 35 (7), 625-635.
- F38. Kiss, R, Jai, J. Kollár, L.P., and H. Krawinkler : FRP strengthened Masonry Beams. Part I - Model. Accepted for publication, "International J. of Composite Materials"
- F39. Kiss, R, Jai, J. Kollár, L.P., and H. Krawinkler : FRP strengthened Masonry Beams. Part II - Test Results and Model prediction. Accepted for publication, "International J. of Composite Materials)
- F40. Kollár, L.P: Flexural-torsional buckling of open section composite columns with shear deformation. International Journal of Solids and Structures. 38. (2001), 7525-7541.
- F41. Kollár, L.P: Flexural-torsional vibration of open section composite beams with shear deformation. International Journal of Solids and Structures. 38. (2001), 7543-7558.
- F42. Kollár, L.P: Discussion on the paper of Qiao, P. Davalos, J.F. and Wang, J. : Local Buckling of Composite FRP Shapes by Discrete Plate Analysis. "Journal of Structural Engineering", (Accepted for publication.)
- F43. Kollár, L. P. (2001). Buckling of Unidirectionally Loaded Composite Plates with One Free and One Rotationally Restrained Unloaded Edge. "Journal of Structural Engineering", (Accepted for publication.)
- F44. Sapkás, Á and L.P. Kollár: Lateral-torsional buckling of composite beams with shear deformation. International Journal of Solids and Structures, (Accepted for publication.)
- F45. Kollár, L.P: Local Buckling of Composite (FRP) Beams. "Journal of Engineering Mechanics", (Submitted for publication.)
- F46. Pluzsik, A, and L.P. Kollár: Analysis of Thin Walled Composite Beams with Arbitrary Layup, Journal of Reinforced Plastics and Composites, (Submitted for publication.)
- F47. Pluzsik, A, and L.P. Kollár: Effect of Shear Deformation and Restrained Warping on the Displacements of Composite Beams, Journal of Reinforced Plastics and Composites, (Submitted for publication.)

(“H” Refereed Journals and Publications of the University (in Hungarian):

- H1. Kollár, L. P. : The Paradox of Decrease of Load-bearing Capacity (Investigation of Steel and Reinforced Concrete Cross-Sections.) Műszaki Tudomány. 62. (1982), 285-305.
- H2. Kollár, L. P. : Analysis of Statically Undetermined Structures with Variable Moment of Inertia Using Approximate Polynomials. Mélyépítéstudományi Szemle. 33. (1983), 304-306.
- H3. Hegedűs, I., Huszár, Zs., and Kollár, L. P. : Analysis of Multibay and Multistory Frames Braced by Shear Walls. Építés-Építészettudomány. 62. (1985), 335-346.
- H4. Hegedűs, I. and Kollár, L. P. : Buckling of Sandwich Plates with Thick Faces. Mélyépítéstudományi Szemle. 38. (1988), 173-176.
- H5. Hegedűs, I. and Kollár, L. P. : Application of Order Statistics in the Calculation of Load-bearing Capacity of Structures. Mélyépítéstudományi Szemle. 40./1 (1990), 33-40.
- H6. Kollár, L. P. and Takács, Z.: On the Design Charts of Reinforced Concrete Columns. Mélyépítéstudományi Szemle. 41./6 (1991), 227-231.
- H7. Pelle, J. and Kollár, L. P.: Analysis of slabs on elastic foundation. Építés- Építészettudomány. (1995), 257-284.
- H8. Kollár, L. P. and Köpecsiri, A.: Time dependent behaviour of reinforced concrete structures. (Part I.: Dischinger's model), Építés-Építészettudomány. (1996-97),91-116.
- H9. Kollár, L. P. and Köpecsiri, A.: Time dependent behaviour of reinforced concrete structures. (Part II.:

EUROCODE's model), *Építés-Építészettudomány*. (1996-97), 117-130.

H10. Kollár, L. P. and Kiss, Rita: *Fiber Reinforced Plastics in Civil Engineering. Part I. Materials*. *Közúti és Mélyépítéstudományi Szemle*. 48. (1998) 331-338.

H11. Horváth, A. Sapkás, Á. and Kollár, L. P. : *Design of a Composite (Fiber Reinforced Plastic) Bridge*. (In Hungarian). *A BME Építőmérnöki Kar Vasbetonszerkezetek Tanszéke TUDOMÁNYOS KÖZLEMÉNYEI*. Budapest, 1997. p. 67-74.

H12. Kiss, R. and Kollár, L. P. : *Study of masonry beams subjected to bending strengthened by composite layers*. (In Hungarian). *A BME Építőmérnöki Kar Vasbetonszerkezetek Tanszéke TUDOMÁNYOS KÖZLEMÉNYEI*. Budapest, 1997. p.99-108.

H1. Pluzsik A., Kollár L.P. és Varga László : *Experimental investigation of the anchorage length of composites*. *A BME Építőmérnöki Kar Vasbetonszerkezetek Tanszéke TUDOMÁNYOS KÖZLEMÉNYEI*. Budapest, 2000. p.223-230.

H2. Potzta G. és Kollár L.P.: *Approximate analysis of building subjected to earthquakes*. *A BME Építőmérnöki Kar Vasbetonszerkezetek Tanszéke TUDOMÁNYOS KÖZLEMÉNYEI*. Budapest, 2000. p.231-238.

H3. Sapkás Á. és Kollár L.P.: *Shear and torsion according to EUROCODE-2. (comparison with the Hungarian standard)*. *A BME Építőmérnöki Kar Vasbetonszerkezetek Tanszéke TUDOMÁNYOS KÖZLEMÉNYEI*. Budapest, 2000. p.263-274.

H4. Varga L. és Kollár L.P.: *Investigation of composite anchorage strips subjected to axial load*. *A BME Építőmérnöki Kar Hidak és Szerkezetek Tanszéke TUDOMÁNYOS KÖZLEMÉNYEI*. Budapest, 2000. p.191-206.

H5. Kollár L.P.: *Load bearing capacity of bridges subjected to overweight vehicles*. *Közlekedés és Mélyépítéstudományi Szemle*. 2001, 349-356

H6. Kollár L.P.: *Approximate analysis of bridges for determining the optimal route of overweight vehicles*. *Közlekedés és Mélyépítéstudományi Szemle*. 2001, 227-230

Books (in Hungarian):

Hegedûs, I. and Kollár, L. P. : *Application of the Sandwich Theory for the Stability Analysis of Engineering Structures*. Chapter in: *Special Problems of Structural Stability*. Akadémiai Könyvkiadó, Budapest, (1990). pp. 423-542.

Kollár, L. P. : *Mechanics of Reinforced Concrete*. (pp.194) Technical University of Budapest, 1995.

Kollár L. P. : *Reinforced Concrete Structures*. (pp.295) Technical University of Budapest, Budapest, 1997.

Books (in English):

Hegedûs, I. and Kollár, L. P. : *Application of the sandwich theory in the stability analysis of engineering structures*. (Chapter of the book ``Structural stability in engineering practice" Ed. Kollár Lajos.) E & FN Spon, (1999). (A K1. könyvfejezet jelentősen átdolgozott angol nyelvű kiadása.)

Lecture Note

George Springer and Laszlo P. Kollar: *Introduction to Composite Materials*. AA256. January 1999. Stanford University.