



National Academy of Sciences of Ukraine, established in 1918

Igor' Yakovlevich Amiro (? – 1998)

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Igor' Yakovlevich Amiro, renowned scientist in mechanics, recipient of the State Prize of Ukraine in Science and Technology, and Doctor of Engineering Sciences, passed away on November 14, 1998 after a long and difficult illness. I. Ya. Amiro began his scientific work as a postgraduate student at the Institute of Mechanics of the Academy of Sciences of the Ukrainian SSR in 1947. He then served as junior and senior research officer at the Institute. In 1962, Amiro organized and headed the Department of Structural Mechanics of Thin-Walled Structures; he served for 15 years as the Institute's Deputy Director for Scientific Research and in recent years was its leading research officer. The scientific-pedagogical activities of I. Ya. Amiro were linked with the Kiev Institute of Structural Engineering, where he previously studied. He taught classes there as a professor in the Department of Structural Mechanics and served on a special committee that reviewed doctoral dissertations. For many years, he was also a member of a special committee at the Institute of Mechanics which performed the same function. The name of I. Ya. Amiro is widely known among experts in structural mechanics. He published more than 100 scientific treatises, including six monographs examining different problems in the statics, dynamics, and stability of thin-walled structures. He was one of the first scientists to demonstrate the need to account for the discrete location of ribs in the solution of problems on the structural mechanics of shells, and he obtained several important results in investigations of their stability and vibration. In recent years, he was actively studying nonlinear vibrations of shells and made several important discoveries here as well. I. Ya. Amiro established a scientific school, and his adherents - which include one Doctor of Science and 14 Candidates of Science - are making further progress in this area of research. The studies of I. Ya. Amiro in the mechanics of ribbed shells are widely known in this country and abroad. His colleagues were impressed with the creative energy of I. Ya. Amiro, and his broad erudition and professionalism, which were manifested in his work on the dissertation committees and his scientific seminars at the Institute of Mechanics and Kiev Technical University of Construction and Architecture. I. Ya. Amiro was a member of the National Committee of Ukraine for Theoretical and Applied Mechanics, a member of the scientific council on problems of the "Mechanics of Deformable Solids" of the Presidium of the **National Academy of Sciences of Ukraine**, and head of the structural mechanics subsection of that council. The editorial board of *International Applied Mechanics*, of which Igor' Yakovlevich was an active member for many years, extends its deepest sympathy to his family and friends. (Translated from *Prikladnaya Mekhanika*, Vol. 35, No. 3, p. 112, March 1999)

Selected Publications:

- I. Ya. Amiro, "Stability analysis of a ribbed cylindrical shell under longitudinal compression," *Prikl. Mekh.*, 6, No. 3, 272–281 (1960).
- I. Ya. Amiro, "The stability of a ribbed cylindrical shell under longitudinal compression," *Dop. Akad. Nauk Ukrainy*, No. 10, 1344–1348 (1960).
- I. Ya. Amiro, "Analysis of the ultimate load for ribbed cylindrical shells under the concurrent action of axial forces and internal pressure," *Prikl. Mekh.*, 7, No. 5, 496–502 (1961).
- I. Ya. Amiro, "Stability analysis of a ribbed cylindrical shell under eccentric compression," *Prikl. Mekh.*, 8, No. 4, 359–367 (1962).
- I. Ya. Amiro, "On buckling strength of thin cylindrical shells," *Prikl. Mekh.*, 9, Issue 3, 264–269 (1963).
- I. Ya. Amiro, "Analysis of the stability and supercritical strains of ribbed cylindrical shells under axial compression," *Prikl. Mekh.*, 1, No. 10, 30–37 (1965).
- I. Ya. Amiro, "The effect of initial deflections on the stability of ribbed cylindrical shells under axial compression," *Prikl. Mekh.*, 11, No. 1, 53–58 (1966).
- I. Ya. Amiro, "Influence of reinforcement parameters of ribbed cylindrical shells on the magnitude of the critical load," *Prikl. Mekh.*, 5, No. 2, 71–78 (1969).
- I. Ya. Amiro, V. A. Zarutskii, and P. S. Polyakov, "Carrying capacity of ribbed cylindrical shells," *Prikl. Mekh.*, 5, No. 2, 107–117 (1969).
- I. Ya. Amiro, P. S. Polyakov, and V. G. Palamarchuk, "Stability of imperfect cylindrical shells," *Prikl. Mekh.*, 7, No. 8, 9–15 (1971).
- I. Ya. Amiro, A. S. Pal'chevskii, and P. S. Polyakov, "Examination of the stability of a ribbed cylindrical shell with large right-angled openings under axial compression," in: *Proceedings of the fourth All-Union Conference on Problems of Stability in Engineering [in Russian]*, Moscow (1972), pp. 112–113.
- I. Ya. Amiro, "On investigations of the stability of ribbed cylindrical shells", *International Applied Mechanics*, Vol. 8, No. 12, 1972, pp. 1300-1307, doi: 10.1007/BF00883528 (Institute of Mechanics, Ukraine SSR Academy of Science, Kiev. Translated from *Prikladnaya Mekhanika*, Vol. 8, No. 12, pp. 15–24, December, 1972.)
- I. Ya. Amiro, A. S. Pal'chevskii, and A. A. Pryadko, "Method of parameter selection for a ribbed cylindrical shell under axial compression," *Sopr. Mater. Teor. Soor.*, No. 16, 138–140 (1972).
13. I. Ya. Amiro, A. S. Pal'chevskii, and A. S. Pryadko, "Method of parameter selection for a ribbed cylindrical shell under axial compression," *Stroit. Mekh. Rasch. Soor.*, No. 4, 28–31 (1972).
- I. Ya. Amiro, A. S. Pal'chevskii, and P. S. Polyakov, "Stability under axial compression of a ribbed cylindrical shell with large rectangular holes," *Sopr. Mater. Teor. Soor.*, No. 21, 98–107 (1973).
- I. Ya. Amiro and N. Ya. Prokopenko, "Stability of a laminar cylindrical shell reinforced by longitudinal ribs under axial compression," *Sopr. Mater. Teor. Soor.*, No. 21, 3–11 (1973).
- I. Ya. Amiro, V. A. Zarutskii, and P. S. Polyakov, *Ribbed Cylindrical Shells [in Russian]*, Naukova Dumka, Kiev (1973).
- I. Ya. Amiro, V. A. Zarutskii, I. F. Larionov, et al., "Influence of the eccentricity of ribs on the critical load under axial compression for cylindrical shells," *Prikl. Mekh.*, 10, No. 12, 31–38 (1974).
- I. Ya. Amiro, G. I. Diamant, and V. A. Zarutskii, "Determining the critical stress in cylindrical shells reinforced by longitudinal ribs under axial compression," *Prikl. Mekh.*, 11, No. 12, 3–8 (1975).
- I. Ya. Amiro, V. A. Zarutskii, and V. I. Matsner, "Influence of the eccentricity of ribs on the stability of cylindrical shells under axial compressive forces and internal pressure," *Stroit. Mekh. Rasch. Soor.*, No. 1, 25–27 (1975).
- I. Ya. Amiro and A. S. Pal'chevskii, "Optimization of the reinforcement of longitudinally compressed cylindrical shells," *Prikl. Mekh.*, 11, No. 11, 31–35 (1975).

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- I. Ya. Amiro and V. A. Zarutskii, "Experimental and theoretical determination of the natural frequencies of reinforced cylindrical shells," *Prikl. Mekh.*,13, No. 10, 6–13 (1977).
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- I. Ya Amiro and V. A. Zarutskii, "Studies of the dynamics of ribbed shells,"*Prikl. Mekh.*,17, No. 11, 3–20 (1981).
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- I. Ya. Amiro, "Efficiency analysis of the reinforcement of a spherical shell with an initial deflection under static external pressure,"*Prikl. Mekh.*,25, No. 4, 17–24 (1989).
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