Ilya Kolesnikov

Education:

Faculty "Aircraft Engines" of the S. Ordzhonikidze Moscow Aviation Institute (MAI), 1974.

Foreign languages:

English.

Academic rank:

Senior researcher in Fracture Mechanics (1988).

Degrees:

- Dr. in physics and mathematics specializing in fracture mechanics, Moscow State Institute of Electronics and Mathematics (MIEM) (1992);
- Ph.D. in engineering science, specialty "Aircraft Strength", MAI (1980).

State Awards:

Medal "850th Anniversary of Moscow" (1997).

Scientific interests:

- Computational Mechanics of deformable solids;
- Hard finite element problem;
- Nonalgebraic finite elements with an arbitrary number of nodes.

Main scientific results:

- The numerical and analytical method of finite Fourier series for the calculation of strength, stability and vibration of three-layer plates and shallow shells (1974–1983);
- Construction of complete systems of 1D, 2D and 3D non-algebraic functions form for an arbitrary number of boundary nodes without the introduction of internal degrees of freedom (1983–1994);
- Construction of robust non-algebraic flexural-shear plate finite Kirchhoff-Reissner-Mindlin element (1994–2004).

Scientific research and management:

- Expert of the Federal Roster of Scientific and Technical Spheres of the Ministry of Education of the Russian Federation (FRE) (2014);
- Member of the Specialized Scientific Theses Council of Mechanics and Mathematics Faculty of MSU (2013);
- Member of EUROMECH (1994);
- Member of GAMM (1993);
- Expert of RFBR (2004) and RSF (2013).

Positions:

- MAI, Department of Strength of Materials: researcher (1974), senior researcher (1980), leading researcher (1992–1993);
- S. A. Lavochkin Scientific and Production Association, Department of strength: leading researcher (1994–1995);
- Institute of Applied Mechanics RAS, Department of structured and heterogeneous environment: leading researcher (1995–2004);
- Geophysical Center RAS, Laboratory of geodynamics: leading researcher (2004–p.t.).

Research:

- 1992–1995 – development of problem-oriented finite element complex for calculation composite thin-walled aircraft structures;
- 1974–1993 – scientific work on development of the theory and methods of calculation of laminated thin-walled structures, headed by Corresponding Member of the Academy of Sciences of the USSR E. I. Grigolyuk and professors: P. P. Chulkov, A. G. Gorshkov and V. I. Shalashilin.
- 1994–2004 – development of non-algebraic version of the finite element method for solving stiff variational problems of solid mechanics;
- 1995–2004 – development of non-algebraic spectral finite elements;
- From October 2004 – participation in the development of finite element complex for analysis of stress concentration at the choice of radioactive waste disposal sites in the natural massif; development and program implementation of mechanics and mathematical modeling tasks for zoning the fault geological environment.

Publications:

Co-author of a monograph and a textbook. 79 articles published in Russian scientific peer-reviewed journals**.**