

ПЕРСОНАЛИИ

Sergey Grigorievich Pyatkov (on 65th birthday)



Professor Sergey Grigorievich Pyatkov was born in a small village of Elunino of Altai region, Russia, on January 5, 1956. He graduated from the mathematical faculty of the Novosibirsk State University in 1978. Just after his graduation he became a probationer-researcher in the department of the theory of functions of the Institute of Mathematics of the Siberian Branch of the USSR Academy of Sciences (Novosibirsk). He was promoted to the junior researcher position in 1980, and he defended his thesis titled “Well-Posed Boundary Value Problems for Composite Type Equations And Their Generalizations” in 1982. The typical examples of these equations are the Sobolev equation, Barrenblatt–Zheltov–Kochina equation, and many other models of mathematical physics. Professor V.N. Vragov was his scientific supervisor during his work at the Institute of Mathematics. Beginning with 1985, articles by S.G. Pyatkov deal with the spectral theory of operators in Krein spaces. Elliptic spectral problems with an indefinite weight function can be considered as examples. The spectral problems of this form were studied in many papers. Primarily, we should mention the early articles by Hilbert who proved the existence of infinitely many positive and negative eigenvalues in the one-dimensional case and considered the corresponding eigenfunction expansion. Similar questions were also discussed in the articles by R.G.D. Richardson, O. Haupt, H. Hilb (1905–1915). The first results in the multidimensional case are due to E. Holmgren (1907). The asymptotic distribution of the eigenvalues of these problems were established in the articles by M.Sh. Birman and M.Z. Solomyak (1977–1979), J. Fleckinger and M.L. Lapidus, E.I.M. Veling, A.B. Mingarelli, and some other authors (1980–1990). Studying the completeness questions for the root functions of the problem is a comparatively recent matter. Many articles are devoted to the model problems arising in mathematical physics. The most general results in this direction were obtained by M. Fairman (1989–1990). The first articles devoted to the unconditional basis property appeared only recently

(R. Beals, S. Pyatkov, 1984, 1985). Later, this question was extensively studied up to this time, but mainly in the one-dimensional case. We should mention the articles by B. Najman, B. Curgus, P. Binding, R. Hryniv, H. Langer, H. Volkmer, A. Fleige, A. Parfenov. Some results in the multi-dimensional case were obtained in the articles by B. Curgus and B. Najman, M. Faerman, G.F. Roach. In the articles by S.G. Pyatkov new criterions and some sufficient conditions were obtained ensuring the Riesz basis property of eigenfunctions and associated functions of indefinite spectral problems such as elliptic spectral problems with an indefinite weight function and general spectral problems for linear pencils of operators in a Hilbert space. The Krein spaces theory is involved in other results by S.G. Pyatkov devoted to the existence of maximal semidefinite invariant subspaces for J -dissipative operators. These results are applied in the study of boundary value problems for kinetic operator-differential equations whose theory can be used in theory of boundary value problems for nonclassical differential equation (forward-backward parabolic equations, mixed type equations, Fokker-Plank equation, and some others). In 1995, S.G. Pyatkov became a Doctor of Physical and Mathematical Sciences (D.Sc.) in Novosibirsk State University (Novosibirsk). Thesis is titled as “Indefinite Spectral Problems and Their Applications to the Theory Of Boundary Value Problems of Mathematical Physics”. Next, he was appointed as senior researcher and then the leading researcher of the Sobolev Institute of Mathematics (Novosibirsk). Recent results by S.G. Pyatkov are connected with inverse problems for parabolic equations and systems, where the unknowns are the right-hand side of an equation of its coefficients. The overderminations conditions are the values of a solution on some spatial manifolds or at separate points. These problems arise in heat and mass transfer theory, diffusion, filtration, and many other fields of mathematical physics. In many case well-posedness of these problems was established. As regard to teaching experience of S.G. Pyatkov, we note an assistant lecturer in 1983–1991, Novosibirsk State University (Novosibirsk), an associate professor in 1991–1996, Novosibirsk State University (Novosibirsk), a full professor in 1996–2002, Novosibirsk State University (Novosibirsk), and a full professor in 2002–present, Ugra State University (Hanty-Mansiisk, Russian Federation). In 2002, S.G. Pyatkov was appointed as the head of the mathematical department of the Yugra State University. S.G. Pyatkov was the leader of a series of grants supported by Russian Foundation for Basic Research (RFBR), No. 97-01-00894, 99-01-00621, 01-01-796, 03-01-00819, 06-01-00439, 09-01-00422, 12-01-00260, 15-41-00063, 18-01-00620.

On 65-th anniversary, friends and colleagues wish to Professor Sergey Pyatkov many years of successful work!

**N.L. Abasheeva, S.A. Zagrebina, A.A. Zamyshlyeva, A.V. Keller,
A.I. Kozhanov, G.A. Sviridyuk, S.I. Kabanikhin, E.I. Safonov,
A.P. Soldatov, V.V. Slavskii**

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