To the 70th birthday of Arkadii Petrovich Ivanov

December 30 of 1999 is the 70th birthday of Professor Arkadii Petrovich Ivanov, who is the well-known scientist in optics of scattering media, Honored Scientist of Belarus, head of the laboratory of the Institute of Physics of the National Academy of Sciences of Belarus (NASB), corresponding member of NASB, doctor of physics and mathematics.

Professor A.P. Ivanov began his research activity at the Vavilov State Optical Institute. His first papers were devoted to spectroscopy of disperse luminescent objects. In 1958 he defended his candidate's thesis devoted to these studies.

Since 1959 Professor A.P. Ivanov has lived in Minsk, and worked at the Institute of Physics of the National Academy of Sciences of Belarus. The beginning of his scientific activity in Belarus coincided with the period of the second birth of physical optics due to the advent of lasers. Professor A.P. Ivanov was among the first researchers who understood wide promises of these new sources of radiation for optical communication, vision, atmospheric sounding, and detection and ranging. He was also one of the first scientists who started to work in this new research fields. The method of experimental optical modeling have found a wide utility. This method based on the principle of optical similarity was proposed by A.P. Ivanov. Application of this method not only allowed obtaining of principally new results, but also significantly decreased technical complication and expenses for *in situ* experiments. Now this method is widely applied in all research centers dealing with optics of the atmosphere and ocean, scientific photography, biophysics, etc.

A.P. Ivanov and his students have thoroughly studied peculiarities of propagation of cw and pulsed laser radiation through scattering media, revealed conditions and regularities of manifestation of nonlinear effects associated with high power of radiation, provided the basis for the use of coherent properties of scattered radiation in studies of the medium structure, proposed and developed some new techniques in spectroscopy of scattering media.

We would like to specially emphasis the services of A.P. Ivanov in the development of the method of laser sounding of water and the atmosphere. He was among founders of this promising research field. In collaboration with his colleagues, he proposed, theoretically justified, and experimentally checked some new methods of laser sounding. Then development of the method of laser sounding of the atmospheric and water basins became one of the main fields of his research activity. In the 60's–90's a series of lidars of different type and purpose has been designed under his leadership. This equipment provided the possibility of obtaining unique results, in particular, in multifrequency laser sounding of atmospheric aerosol. In the last decade he and his group have paid much attention to ecological monitoring of the atmosphere.

Professor A.P. Ivanov is taking an active part in the development of methods and instrumentation for measurements of the optical characteristics of environment, what is of direct practical significance in ecological problems. Lidar instrumentation, as well as hydrooptical devices designed under the leadership of Professor A.P. Ivanov, are now widely used for these purposes. Results of research missions, in which Professor Ivanov took part, demonstrated high efficiency of the developed instrumentation. Research missions headed by Professor Ivanov have wide geography: it is the whole territory of the former USSR from west to east and from south to north, as well as the water areas of the Pacific, Indian, Atlantic, and Arctic Oceans.

Deep scientific intuition and harmonious combination of theory and experiment allowed A.P. Ivanov to obtain important results in other fields of physical optics: luminescence, spectroscopy, and quantum electronics. He has published more than 400 papers, among them seven books presenting the results of researches in optics of scattering media; physical principles of hydrooptics; light scattering by photographic layers, luminescent screens, close-packed disperse media; theory of radiative transfer; and theory of vision, detection, and ranging in scattering media.

Professor A.P. Ivanov heads the internationally known research group. Four his students defended their doctor's theses, and 31 students became candidates of science under his supervision.

Professor Ivanov is the member of the councils on propagation of electromagnetic waves, the member of the editorial boards of the journals *Fizika Atmosphery i Okeana* (Russian *Physics of the Atmosphere and Ocean*) and *Atmospheric and Oceanic Optics*.

Professor A.P. Ivanov is distinguished by wide research interests, deep understanding of physics of studied phenomena, insistence on a high standards, great capacity for work, modesty, and goodwill.

The Editorial Board of the journal *Fizika Atmosphery i Okeana* would like to congratulate Arkadii Petrovich Ivanov on his 70th birthday and wish him to be healthy and successful in his further researches.

The staff of the Institute of Atmospheric Optics SB RAS and Editorial Board of the journal *Atmospheric and Oceanic Optics* also join these congratulations and express their heartiest wishes to Prof. A.P. Ivanov on the occasion of his jubilee.

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