

**CONGRATULATIONS TO ACADEMICIAN ZHOU YULIN
ON HIS 80th BIRTHDAY**

Editorial Committee of Journal of Computational Mathematics

Editorial Committee of Mathematica Numerica Sinica

Editorial Committee of Journal on Numerical Methods and Computer Applications

Editorial Committee of Chinese Journal of Numerical Mathematics and Applications



February 12, 2003 is the 80th birthday of Professor Zhou Yulin, an outstanding mathematician, academician of Chinese Academy of Sciences, an honorary member of the editorial board of our journals. We publish this special issue as our sincere congratulations to him.

Professor Zhou Yulin was born in Shanghai, with the ancestral home in Zhenhai, Zhejiang Province. He graduated from the Department of Mathematics at Datong

University in Shanghai in 1945 and then went on to study under the great mathematician S.S.Chern at the Institute of Mathematics of the Central Academy of Sciences in Nanking. In 1949, he made a resolute decision to go to the North and taught first at Tsinghua University and afterwards at Peking University. In 1954 he was chosen to pursue his advanced studies in Moscow University and there he majored himself in partial differential equations, which was more necessary in the motherland, under the guidance of the world famous mathematician O.A.Oleinik. He got his candidate doctor's degree of physical and mathematical sciences of U.S.S.R. in 1957. Upon returning to the homeland, he devoted himself to research and teaching. In 1960 he was summoned to participate in the theoretical research on nuclear weapon and has been working for the Institute of Applied Physics and Computational Mathematics in Beijing ever since.

Professor Zhou's academic attainments involve multiple fields such as topology, partial differential equations, computational mathematics, fluid dynamics and computer applications. His early work was centered on homology and homotopy theory in topology and he published a number of research papers. His remarkable achievements in this field and solid knowledge in topology greatly influenced his later research methods for nonlinear problems.

From the middle 1950's to the early 1960's, he obtained systematic and profound results for the equations of nonlinear elliptic and parabolic type, including regular and degenerate equations. His accomplishments particularly in the following three aspects are most influential.

1. His paper on the porous medium equations. This work was conducted collaboratively with Professor O.A.Oleinik and the others, which discussed in depth the existence, uniqueness and other properties of the weak solution and has been served as the framework by most of the scholars in this field in their research work all over the years. Until today the paper, hailed as pioneer and classical work, has been extensively cited by the researchers in the same field both home and abroad.

2. His research work on Neumann problems for quasilinear parabolic equations of second order. He created a priori estimates of the derivatives of solutions and the constructions of auxillary functions and proved the existence of global solutions in his paper, which is likewise frequently cited by scholars home and abroad.

3. His research on quasilinear degenerate elliptic equations of second order. He successively generalized the classical work on linear degenerate elliptic equation by U.S.S.R. mathematician M.V.Keldish to quasilinear equations. This work largely affected a number of domestic scholars and led to much follow-up work.

During the years of teaching at Peking University, Professor Zhou led and organized seminars on nonlinear partial differential equations, whose members were young scholars from all around the country. Professor Zhou fostered a number of excellent people for