



## Hrant Babken Marandjyan

Professor, Doctor of Physical and Mathematical Sciences,  
Corresponding Member of NAS RA  
(1939-2020)

This issue of the Periodical is dedicated to the 85th anniversary of Hrant Babken Marandjyan, a famous scientist in the field of mathematical cybernetics and information technology. He would have turned 85 years old if his earthly life had not been interrupted on March 14, 2020. A wide range of scientific interests: mathematical logic, recursion theory, complexity theory of the degree of algorithmic unsolvability, the theory of probabilistic automata, automatic analysis and synthesis of algorithms and programs, automatic synthesis and optimization of computer programs, was formed in the schools of prominent scientists who made a quite tangible contribution to the development of mathematical logic, theory of algorithms and control theory.

Among the numerous works of Hrant Marandjyan, those highly appreciated by specialists in the field of mathematical logic and theory of algorithms (both in the former Soviet Union and in Western and Eastern Europe, as well as in the USA), are particularly distinguished by their focus on the study of Kolmogorov complexity properties. These works are considered some of the most significant contributions to the mentioned area.

Investigations concerning the properties of sets of minimal indices in complete and precomplete numberings, are also crucial. It is sufficient to note the solution of generalizing the well-known A. Mayer problem on  $m$ -degrees of sets of minimal numbers in the main

numberings. The existence of main numberings is proved, the sets of minimal numbers of which are complete with respect to a number of reducibilities.

The issues of representing partially recursive functions using recursive equations of a general form were thoroughly considered, which is a new direction in this sphere, since earlier only recursive equations with separable variables were considered in the literature, and equations of a more general form were considered only in special areas. A necessary and sufficient condition for the existence of solutions to extensional recursive equations of a general form was found. A similar result was obtained in the study of intensional recursive equations of a general form.

For more than fifty years, Marandjyan's scientific and organizational activities have closely been connected with the establishment of the Computing Center of the Armenian Academy of Sciences (now the Institute for Informatics and Automation Problems of the National Academy of Sciences of the Republic of Armenia), where he headed the Laboratory of the Theory of Algorithms and was also the Deputy Director for Science.

The developments in the field of automatic synthesis and optimization of computer programs, fulfilled under the leadership of Marandjyan, are of great applied value.

Being engaged in fruitful pedagogical activity, Hrant Marandjyan prepared a large number of highly qualified specialists who work effectively in various institutes.

Since the 1990s, his involvement in projects with the Armenian branches of prominent foreign companies in the field of information technology has determined the high scientific level of these companies.

Hrant Marandjyan's integrity, professionalism and devotion to science, along with his attentiveness to colleagues, have earned him respect from the scientific community in Armenia and gratitude from everyone with whom he has collaborated.