Special kind matrix generating: analytical approach

© S.K. Sobolev

Bauman Moscow State Technical University, Moscow, 105005, Russia

The article deals with the analytical methods for generating square matrices of a special kind: orthogonal matrices of a simple structure with rational entries, and integer matrices with integer eigenvalues of any prescribed sign and multiplicity. There were obtained explicit formulas depending on several parameters, which, when substituted by arbitrary integers, give required matrices of any order.

***Keywords*:** *orthogonal matrix, cyclic matrix, Latin matrix, eigenvalue.*

Sobolev S.K. (b. 1951) graduated from the Mechanics and Mathematics Faculty of Lomonosov Moscow State University in 1973 and the postgraduate course in Steklov Mathematical Institute in 1976. Ph.D., Assoc. Professor of the Higher Mathematics Department of Bauman Moscow State Technical University. Author of several articles on mathematical logic, methodology of mathematics teaching and textbooks for students. The Chair of the Methodological Commission of the Higher Mathematics Department. e-mail. sergesobolev@mail.ru