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Short Introduction to the Book

The fundamentals of the theory for the optimal design of flow paths of turbo-machines are presented, including mathematical models of flow path elements, determination of the optimal number of turbine stages and the distribution of the heat drop between them, optimization of the spin laws of the nozzles and blades of axial turbine stages, taking into account slope and curvature stream lines, as well as leaks. Methods for creating optimal profiles considering the strength limitations are given. The problem of the spatial optimization of the shape of turbine blades using computational aerodynamics is described. The examples of the application of the theory to the projection of the optimal flow path of modern steam and gas turbines, taking into account their operational mode, are presented.

Short Biography of the Author



Anatoli Boiko, D. Sc., Full Professor, is a Head of the Turbine Projection Chair. The founder of a new scientific approach to turbine projection - optimal design of turbomachines. Author of many articles and several books on one dimensional, 2D and 3D optimization of the axial turbines flow paths. Winner of the State Prize of Ukraine in science and technology.



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