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Intelligent Diagnostics of Ship Power Plants: Integration of Case-Based Reasoning, Probabilistic Models, and ChatGPT

A Universal Approach to Fault Diagnosis and Prognostics in Complex Technical Systems

MONOGRAPH

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The monograph highlights the following: integrated approach to diagnosing failures in ship's power plants; methodology for determining similarity between cases in the fault diagnosis system of ship's power plants; adaptation of the case-based reasoning method with integration of probabilistic analysis for diagnosis and prognosis of complex systems' technical state; integrated approach to diagnosing complex technical systems, experimental validation and multidimensional efficiency assessment; a hybrid model for evaluating the accuracy of failure forecasts in ship power plants; integrated modeling of reliability and maintenance of spp equipment considering degradation and operational conditions.

The materials of this monograph will be valuable for postgraduate students, master's students, and university instructors specializing in the field of IT technologies.