

FAULT DETECTION SCHEME USING THE AGENTS PARADIGM

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An agent based fault detection (FD) system for complex and dynamic processes is proposed in this work. The system is based in the agent paradigm where the modularity and complexity of the processes are important aspects in the FD system constructed. In the future, the FD agents must be able to cooperate and communicate with other systems to achieve a satisfactory performance, as a part of a fault tolerant control multi-agent system. The FD agents proposed here have hybrid architectures based in a horizontal layered architecture. Two types of FD agents are proposed, one based in decomposition wavelet methods with limit checking and other based in neural networks ARX models for residual generation. The agent based FD scheme proposed is applied in a three tank process.

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