

Petrenko, A. "Fault Model-Driven Test Derivation" In Cassez, F., Jard, C., Rozoy, B. and M. Ryan (eds.). *Proceedings of Modelling and Verification of Parallel Processes (MOVEP'2k)*, pp. 196-205. Nantes, France, June 19-23, 2000. (Lecture Notes in Computer Science, vol. 2067)

### **Abstract**

The annotated bibliography highlights work in the area of algorithmic test generation from formal specifications with guaranteed fault coverage, i.e., fault model-driven test derivation. A fault model is understood as a triple, comprising a finite state specification, conformance relation and fault domain that is the set of possible implementations. The fault model can be specialized to Input/Output FSM, Labeled Transition System, or Input/Output Automaton and to a number of conformance relations such as FSM equivalence, reduction or quasi-equivalence, trace inclusion or trace equivalence and others. The fault domain usually reflects test assumptions, as an example, it can be the universe of all possible I/O FSMs with a given number of states, a classical fault domain in FSM-based testing. A test suite is complete with respect to a given fault model when each implementation from the fault domain passes it if and only if the postulated conformance relation holds between the implementation and its specification. A complete test suite is said to provide fault coverage guarantee for a given fault model.