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   Nota di bibliografia   Includes bibliographical references and index.

   Nota di contenuto   Introduction -- Fundamentals and Compiler Framework -- Symbolic Parallelization -- Symbolic Multilevel Parallelization -- Ondemand Faulttolerant Loop Processing -- Conclusions.

   Sommario/riassunto   This book introduces new compilation techniques, using the polyhedron model for the resource-adaptive parallel execution of loop programs on massively parallel processor arrays. The authors show how to compute optimal symbolic assignments and parallel schedules of loop iterations at compile time, for cases where the number of available cores becomes known only at runtime. The compile/runtime symbolic parallelization approach the authors describe reduces significantly the runtime overhead, compared to dynamic or justin-time compilation. The new, ondemand faulttolerant loop processing approach described in this book protects loop nests for parallel execution against soft errors. .