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Nota di contenuto	Engineered communications for microbial robotics -- Successive state transitions with I/O interface by molecules -- Solution of a satisfiability problem on a gel-based DNA computer -- Diophantine equations and splicing: A new demonstration of the generative capability of H systems -- About time-varying distributed H systems -- String tile models for DNA computing by self-assembly -- From molecular computing to molecular programming -- Graph replacement chemistry for DNA processing -- DNA and circular splicing? -- Molecular computing with generalized homogeneous P-systems -- Computationally inspired biotechnologies: Improved DNA synthesis and associative search using

Error-Correcting Codes and Vector-Quantization? -- Challenges and applications for self-assembled DNA nanostructures? -- A space-efficient randomized DNA algorithm for k-SAT -- A DNA-based random walk method for solving k-SAT -- Solving computational learning problems of Boolean formulae on DNA computers -- The fidelity of annealing-ligation: A theoretical analysis -- DNA implementation of a Royal Road fitness evaluation -- Steady flow micro-reactor module for pipelined DNA computations.

Sommario/riassunto

The papers in this volume were presented at the 6th International Meeting on DNA Based Computers, organized by the Leiden Center for Natural Computing and held from June 13 to June 17, 2000 at The Lorentz Center, University of Leiden, Leiden, The Netherlands. DNA Computing is a novel and fascinating development at the interface of computer science and molecular biology. It has emerged in recent years, not simply as an exciting technology for information processing, but also as a catalyst for knowledge transfer between information processing, nanotechnology, and biology. This area of research has the potential to change our understanding of the theory and practice of computing. The call for papers and poster presentations sought contributions of original research and technical expositions in all areas of bio-computation. A total of 33 abstracts were submitted of which 16 were accepted for presentation and included in the proceedings. The papers were selected by the program committee based on originality and quality of research and on relevance to the bio-computing eld. Invited talks were given by Masami Hagiya (Tokyo University), Laura La-weber (Princeton University), John Reif (Duke University), Thomas Schmidt (Leiden University), and Lloyd M. Smith (University of Wisconsin). Invited - pers based on the talks by Hagiya and Reif are included in this volume, along with the contributed papers. Additional tutorials were held on the rst and last days of the conference.