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Nota di contenuto	Title Page; Contents; Abstract; General Introduction; Chapter 1 Description of the BLOOM model; Chapter 2 Phytoplankton modelling by means of optimization: A 10-years experience with BLOOM II; Chapter 3 Application of a validated primary production model (BLOOM) as a screening tool for marine, coastal and transitional waters; Chapter 4 Mathematical modelling as a tool for management in eutrophication control of shallow lakes; Chapter 5 Validation of water quality and ecological models Chapter 6 Impact of climatic fluctuations on Characeae biomass in a shallow, restored lake in The Netherlands Chapter 7 Trend Analysis of Eutrophication in Dutch Coastal Waters for 1976 through 1994 Using a Mathematical Model; Chapter 8 GEM: a generic ecological model for estuaries and coastal waters; Chapter 9 A 3-dimensional primary production model (BLOOM/GEM) and its applications to the (southern) North Sea (coupled physical-chemical-ecological model); Chapter 10 Complexity, accuracy and practical applicability of different biogeochemical model versions; Summary; Curriculum vitae List of Publications

## Sommario/riassunto

BLOOM, has been developed and applied since 1977. It simulates the biomass and composition of phytoplankton and macro algae in relation to the amount of nutrients, the under water light climate and grazing. This title describes the principles of the model, its validation and a number of representative applications.

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