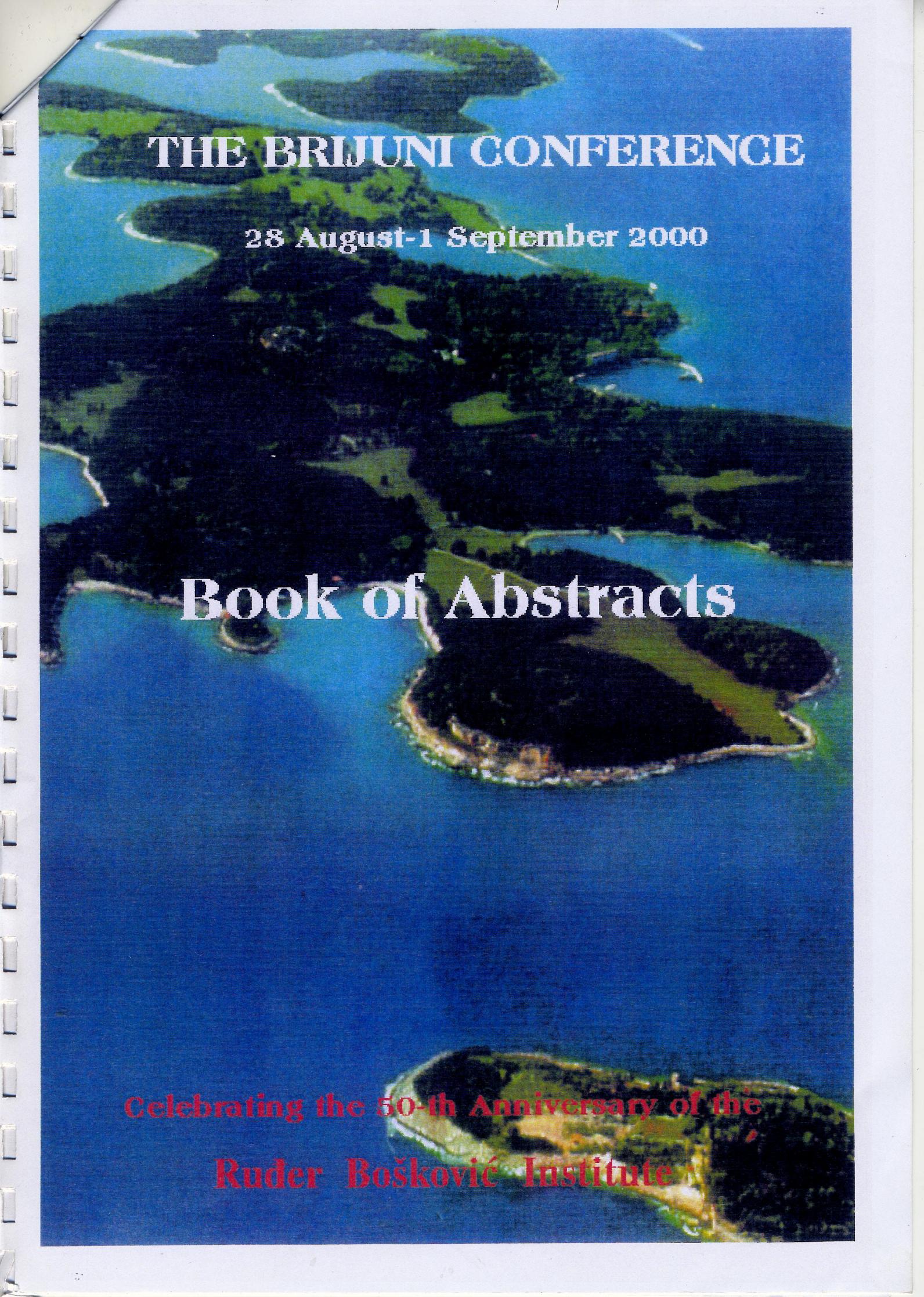


## Quantum Mechanics for Universal Quantum Computers

Mladen Pavičić

*University of Zagreb*

We have recently proved that one can ascribe a logic to neither classical nor quantum bare experimental data. Hence our theories heavily depend on a chosen mathematical model the data fit. For quantum theory this is infinite dimensional Hilbert space which assumes a continuous 3-D space. However, we have also shown that a universal quantum computer cannot use such a theory - it requires finite dimensional Hilbert space and a discrete 3-D space. The latter theory suffices for a perfect simulation of a molecule on a quantum computer. Should we abandon continuum altogether?

The background image shows a series of green, hilly islands with dense forests, separated by narrow channels of bright blue water. The perspective is from above, looking down at the coastline.

# THE BRIJUNI CONFERENCE

28 August-1 September 2000

## Book of Abstracts

Celebrating the 50-th Anniversary of the  
Ruder Bošković Institute

# Brijuni Conference VII

We wish to thank the following for their contribution to the success of this conference:

## Important Problems for the XXI Century \*

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- \* This conference is part of the program to celebrate the 50-th anniversary of the Ruđer Bošković Institute

Zagreb, IRB, 2000

851-0070-60-4821

We wish to thank the following for their contribution to the success of this conference:

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