

## PUBLIC LECTURE EVALUATION

### Masaryk University

<b>Faculty</b>	Faculty of Science
<b>Procedure field</b>	Theoretical physics and astrophysics
<b>Applicant</b>	Mgr. Jiří Chaloupka, Ph.D.
<b>Lecture date</b>	12.5.2021
<b>Lecture topic</b>	Investigation of strongly correlated electron systems by means of exact diagonalization techniques.
<b>Persons present</b> (number)	44
<b>Designated evaluators</b> (board members)	prof. Rikard von Unge, Ph.D. (online) důc. RNDr. Tomáš Novotný, Ph.D. (online) doc. RNDr. Ilja Turek, DrSc. (online) prof. Dr. Maria Daghofer (online)

The public lecture "Investigation of strongly correlated electron systems by means of exact diagonalization techniques." was realized online and was attended by :

prof. Rikard von Unge, Ph.D. (předseda), Přírodovědecká fakulta MU  
doc. RNDr. Tomáš Novotný, Ph.D. (externista), MFF UK Praha  
doc. RNDr. Ilja Turek, DrSc. (externista), Ústav fyziky materiálů AV ČR Brno  
Prof. Dr. Maria Daghofer (zahraniční, externista), Uni Stuttgart, Německo

Unfortunately, none of the opponents were able to attend the lecture.

The lecture was focused on the treatment of lattice models for interacting electrons by the exact diagonalization method. The lecture started with a pedagogical introduction to the topic where various well known models were introduced and described. Subsequently Chaloupka moved to the implementation of the method by the Lanczos algorithm. He illustrated the technique and its challenges on the Kitaev-Heisenberg model where a variety of interesting physical phenomena can be seen. In the end of the lecture the applicant successfully answered all questions from the members of the committee and members of the audience.

### Conclusion

The lecture delivered by Mgr. Jiří Chaloupka, Ph.D. entitled "Investigation of strongly correlated electron systems by means of exact diagonalization techniques." and delivered as part of the habilitation appointment procedure, **demonstrated** sufficient scholarly qualifications and pedagogical capabilities expected of applicants participating in a habilitation procedure in the field of Condensed matter physics.

# MUNI

The lecture took place online at 11am on Wednesday May 12, 2021. The above-mentioned members of the board attended the lecture and provided its evaluation. All designated evaluators are familiar with the text of the evaluation and agree with it.

Date: 12.5.2021

Rikard von Unge .....  
signature

[name and surname] .....  
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[name and surname] .....  
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