



1st Joint Czech-Israeli Workshop

Strong electron correlations in nano-materials for advanced energy applications

Location: Main Building of the Institute of Physics ASCR, Na Slovance 2, Prague, Czech Republic.

Dates: 28.11.2016 - 01.12.2016

Organizers:

Ing. Alexander Shick, DSc., Department of Condensed Matter Theory, FZU ASCR v.v.i., Na Slovance 2, Prague

Contact Email: shick@fzu.cz

Dr. Eitan Eidelstein, Department of Physics, Nuclear Research Center Negev, Beer-Sheva, Israel.

Contact Email: eitan.eidelstein@gmail.com

Members of the organizing committee:

RNDR. Silvia Maskova, PhD. MFFUK, Prague

Contact Email: maskova.silvie@gmail.com

Dr. Itzhak Halevy, Department of Physics, Nuclear Research Center Negev, Beer-Sheva, Israel.

Contact Email: halevy.itzhak.dr@gmail.com

List of invited speakers:

Israel: E. Eidelstein (NRCN), I. Halevy (NRCN), O. Levy (NRCN), I. Orion (BGU) and O. Orion (BGU), M. Gelbstein (NRCN,BGU), G. Cohen (TAU), A. Natan (TAU)

Czech Republic:

J. Kolorenc (FZU), F. Maca (FZU), V. Janis (FZU), V. Drchal (FZU), J. Kudrnovsky (FZU), P. Jelinek (FZU), A. Shick (FZU), O. Sivr (FZU), V. Pokorny (FZU), D. Legut (VSB), K. Vyborny (FZU), S. Maskova (MFFUK), K. Uhlirova (MFFUK), L. Havela (MFFUK)

Guests: A. Lichtenstein (Uni. Hamburg), S. Khmelevskiy (TU Wien)

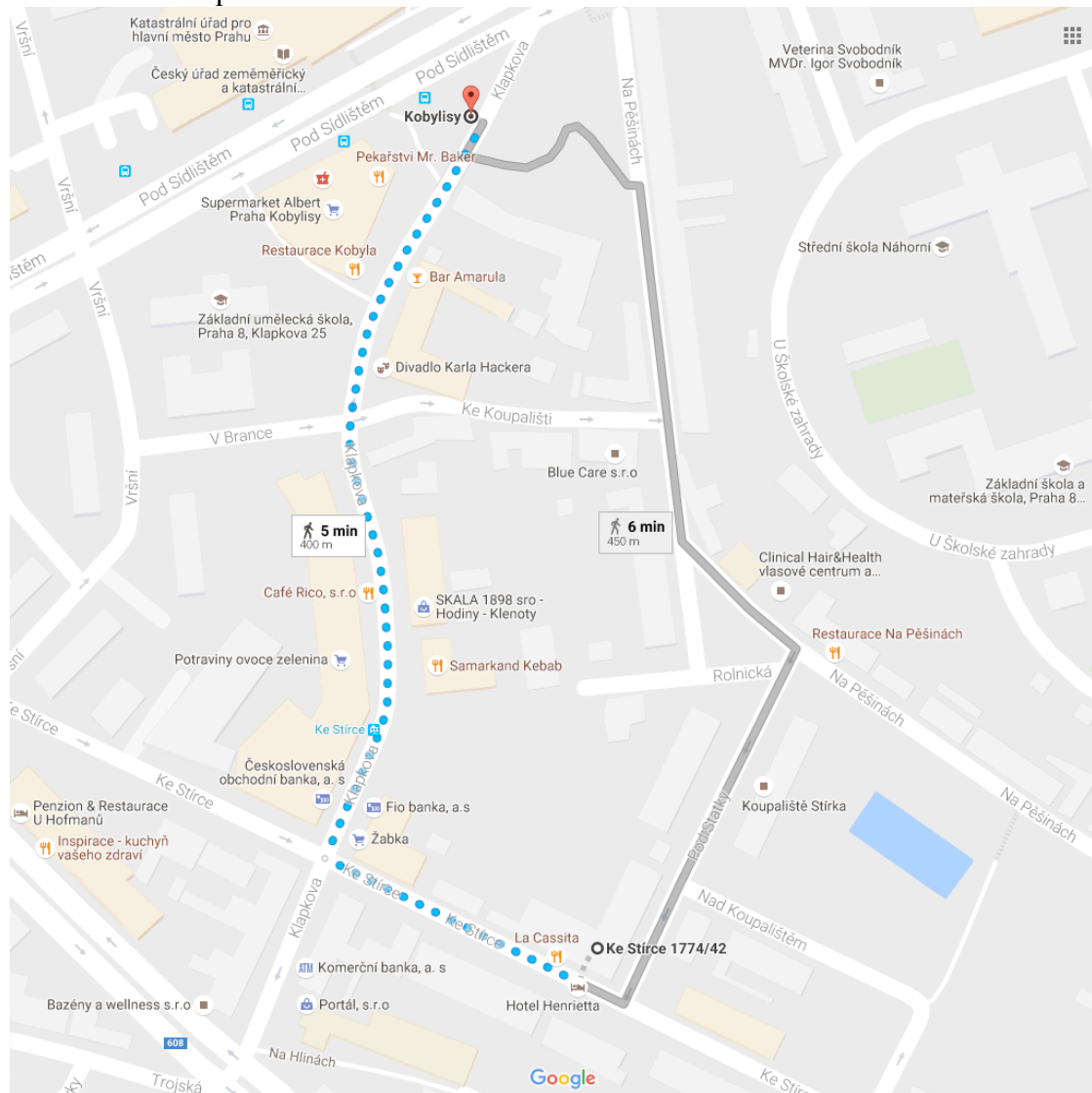
Travel Information:

How to get to the hotel from the airport

The hotel is called Henrietta (Ke Stírce 1774/42, Prague), their web page at booking.com is

<http://www.booking.com/hotel/cz/henrietta.html>

- 1/ take bus number 119 to "Nadrazi Veleslavin" (the end stop of that bus, you cannot miss it),
- 2/ change to Metro (=U-Bahn) line A, take a train in the direction of "Depo Hostivar" or "Skalka", and continue to station "Muzeum",
- 3/ change to line C, take a train in the direction of "Letnany" or "Ladvi", and continue to station "Kobylisy";
- 4/ station Kobylisy has two exits, choose the one in the direction of the train you came in
- 5/ follow the map to the hotel

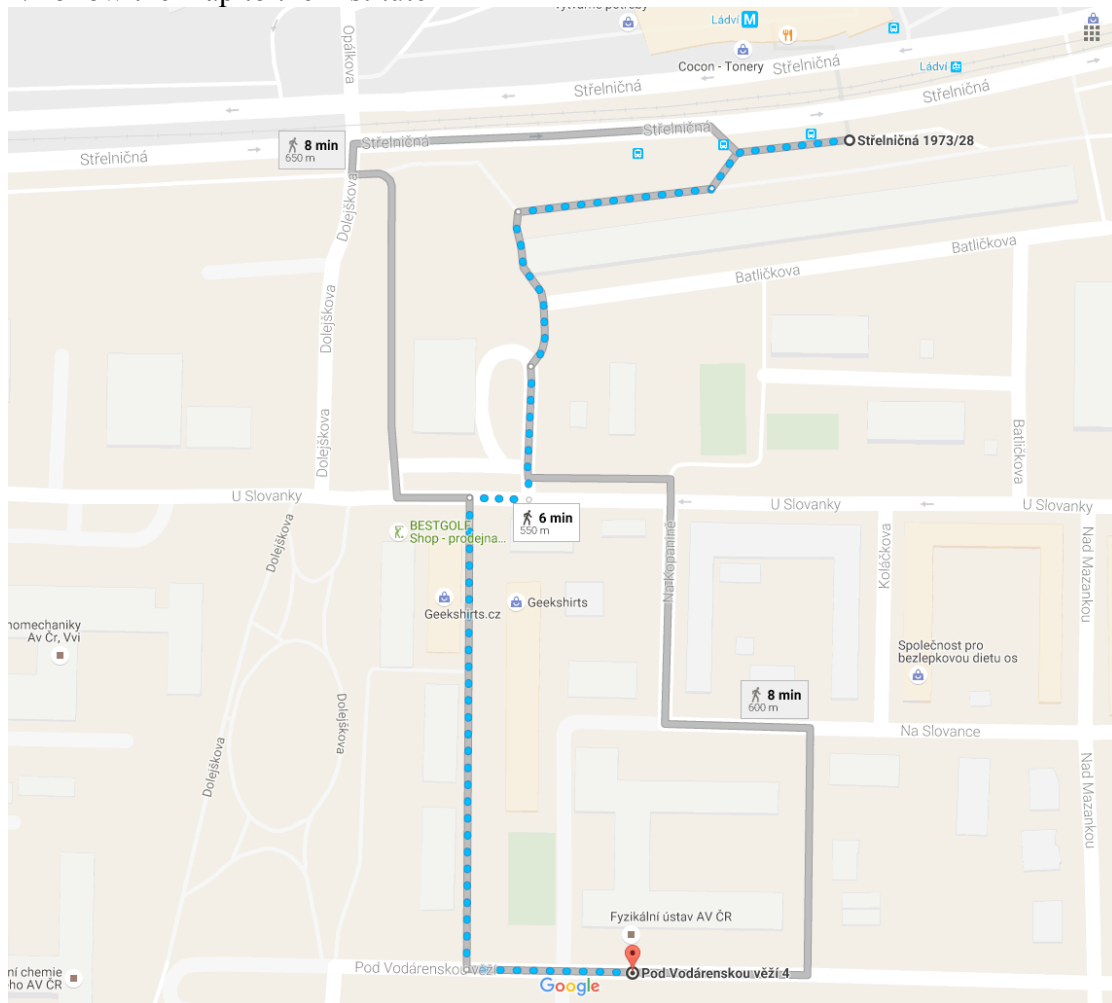


How to get from the hotel to the institute

1a/ return to Metro station "Kobylisy" and take a train in the direction of "Letnany" or "Ladvi", get off at "Ladvi" (it is just one stop)

1b/ on the way to Metro station "Kobylisy", you will see a tram stop "Ke Stírce"; take tram number 10 in the direction of "Sidliste Dablice" and get off at station "Ladvi" (4th stop)

2/ follow the map to the Institute



Miscellaneous info on public transport

1/ There are two basic variants of the ticket: 24 CZK (valid for 30 minutes) and 32 CZK (valid for 90 minutes). You need the longer ticket from the airport, the shorter ticket is enough from the train station.

The ticket has to be stamped once you enter a bus, a tram, or at the entrance to a Metro station.

2/ There are ticket machines at Metro stations and at some Tram stops.

Unfortunately, most of them take only coins. At the airport, there are machines at the bus stop that take cards. There are also information booths at the airport terminals and at the main train station where they sell tickets (check the page <http://www.dpp.cz/en/list-of-info-centres/> to see how the booths look like).

3/ Connection search:

<http://spojeni.dpp.cz/ConnForm.aspx?tt=PID&cl=E5>

Workshop Program:

Monday Nov. 28

Session I.	<i>Chair: A. Lichtenstein</i>
09:05–09:10	Eitan Edelstein and Alexander Shick <i>Opening address</i>
09:10–10:00	Itzhak Halevy Equation of state for intermetallic compounds measured in synchrotron radiation and spallation sources. High Pressure crystallography and magnetic properties measurements.
10:00–10:30	Silvia Maskova Alloying and Hydrogenation of U-metal as a Probe into the 5f-Magnetism
10:30–11:00	<i>COFFEE</i>
11:00–11:50	M. Gelbstein Scientific tools for developing new high entropy alloys
11:50–12:20	E. Edelstein Ab-Initio Prediction of Thermodynamic Properties: Ti and Si as a Case Study
12:20–14:30	<i>LUNCH</i>

Session II.	<i>Chair: V. Janis</i>
14:30–15:20	Sergii Khmelevskiy Functional Antiferro- and Ferrimagnetic Materials for Spintronics Applications: Challenge for Ab-Initio Computations
15:20–15:50	F. Maca Ab initio calculations for magnetic order in surface and bulk systems
15:50–16:20	V. Drchal Spin disorder resistivity of iron at the Earth's core conditions
16:20–17:30	A. Natan Data assisted analysis and DFT simulations of oxide materials
17:30–18:00	<i>Discussion</i>

Tue. Nov. 29

Session I.	<i>Chair: I. Halevy</i>
09:00–09:50	V. Janis Consistent mean-field description of quantum criticality of correlated electrons
09:50–10:20	V. Pokorny Correlation effects in superconducting quantum dot systems
10:20–10:50	<i>COFFEE</i>
10:50–11:20	H. Malte Plaquette valence bond theory of HTSC
11:20–12:10	O. Levy The high throughput highway to computational materials design: current status and future challenges
12:10–14:30	<i>LUNCH</i>

Session II.	<i>Chair: L. Havela</i>
14:00–14:50	A. Lichtenstein Correlation effects in magnetic systems
14:50–15:40	G. Cohen Taming the dynamical sign problem: the Inchworm algorithm
15:40–16:20	A. Shick Single ad-atom magnets: Ho@Pt(111)
16:20–16:50	J. Kolorenc Inelastic electron tunneling: perturbation expansion around the atomic limit

17:00–18:00 *Discussion*

Wed. Nov. 30

Session I.

Chair: G. Cohen

09:00–09:50 P. Jelinek

Studies of molecular nanostructures with scanning probe microscopy: experiment and theory.

09:50–10:20 O. Sipr

Illustrative view on the role of spin-orbit coupling in magnetocrystalline anisotropy of adatoms

10:20–10:40 *COFFEE*

10:40–11:10 D. Legut

Lattice dynamics of UC and UO₂ - importance of the electron correlations and spin-orbit coupling

11:10–12:00 I. Orion

Progress in Low-Energy Electron Transport Measurement Methods in Solids

12:00–14:00 *LUNCH*

Session II.

MFFUK

15:30– Orit Orion

Science Through the Eyes of Art

Thur. Dec. 01

Session I.

Chair: E. Edelstein

09:00–09:30 J. Kudrnovsky

Exchange and spin-orbit induced phenomena in diluted (Ga,Mn)As from first principles

09:30–10:00 A. Kozub

Electronic structure and magnetism of Sm and Nd adatoms on a free-standing graphene

10:00–10:30 K. Vyborny

Anisotropies and domains of antiferromagnetic MnTe

10:30–11:00 *COFFEE*

11:00–11:30 K. Uhlirova

Magnetism and superconductivity in the Ce_nPd_mIn_{3n+2m} homologous series

11:30–12:00 V. Valmispild

"Electron dynamics of correlated materials"

12:00–14:00 *LUNCH*

14:00–18:00 *Round-Table Discussion*
