

*For your information.
Fudlerova*

Vth INTERNATIONAL SEMINAR ON HIGH RESOLUTION
INFRARED SPECTROSCOPY, LIBLICE NEAR PRAGUE,
SEPTEMBER 18 - 22, 1978

PROGRAM OF SESSIONS

The J. Heyrovský Institute of Physical Chemistry
and Electrochemistry, Czechoslovak Academy of
Sciences

Czechoslovak Spectroscopic Society

Vth INTERNATIONAL SEMINAR ON HIGH RESOLUTION
INFRARED SPECTROSCOPY, LIBLICE NEAR PRAGUE.
SEPTEMBER 18 - 22, 1978

Program of Sessions

This year the number of lectures which were submitted to the Organizing Committee was large. Because of this, the Organizing Committee could not give so much time to the speakers as it would wish and we were obliged to arrange two parallel sessions on Monday afternoon. Nonetheless, every speaker will have at least 15 minutes plus 5 minutes (for discussion) or 20 minutes, if he decides to postpone the discussion till noon or evening hours (we have a good experience from the previous Seminars that a bottle of wine in Liblice Castle can stimulate very interesting discussions).

Monday, September 18

- 2 -

Opening Ceremony

9.00 a.m.

Morning Session (Chairman - I.M. Mills)

A1. K. Narahari Rao (Department of Physics, The Ohio State University, Columbus, U.S.A.):

"High Resolution in Infrared Spectroscopy: Progress, Prognosis and Problems"

9.10 - 9.55 a.m.

A2. A.F. Krupnov and A.B. Burenin (Institute for Applied Physics, Soviet Academy of Sciences, Gorky, U.S.S.R.):

"Current Research in Submillimeter Wave Spectroscopy"

10.00 - 10.45 a.m.

Intermission 10.45 - 11.00

A3. G. Winnewisser (Max Planck Institut für Radioastronomie, Bonn, B.R.D.):

"High Resolution Interstellar Molecular Spectroscopy"

11.00 - 11.45 a.m.

A4. L. Henry (Laboratoire de Spectrométrie Moléculaire, Université de Paris VI, France):

Title not yet delivered 11.50 - 12.30 a.m.

Afternoon Parallel Session (Chairman - A. Mantz)

Fourier Transform Spectroscopy

B1. G. Guelachvili (Laboratoire d'Infrarouge, Orsay, France):

"What Should We Expect from Fourier Spectroscopy in the Forthcoming Years?" (invited paper)

2.00 - 2.30 p.m.

B2. C. Asot (1) and G. Guelachvili (2) ((1) Laboratoire de Physique Moléculaire et d'Optique Atmosphérique, Orsay, France, (2) Laboratoire d'Infrarouge, Orsay, France):

"FIS Fundamental Transitions of NO: Extension to ¹⁵N Isotopic Species"

2.35 - 2.50 p.m.

- B3. C. Amiot (1), J. Chauville (2) and J.-P. Maillard (2)
((1) Laboratoire de Physique Moléculaire
et d'Optique Atmosphérique, Orléans, France,
(2) Observatoire de Meudon, Laboratoire du
Télescope Infrarouge, Meudon, France):
"Fourier Spectroscopy of the C₂ Ballik-
-Ramsay System. Analysis of the Rotational
Perturbations in the b³Σ_g⁻ Level"
2.55 - 3.10 p.m.
Intermission 3.15 - 3.30 p.m.
- B4. G. Feneke (Zentralinstitut für Optik und Spektro-
kopie, Berlin, G.D.R.):
"Generalized Instrument Function in
Fourier Spectroscopy and Deconvolution for
High Resolution Problems"
3.30 - 3.45 p.m.
- B5. J. Vergès (1), R. Bacis (2), S. Churassy (2), R.W.
Field (3) and J.B. Koffend (3) ((1) Laboratoire
Aimé Cotton - CNRS, Orléans, France,
(2) Laboratoire de Spectrométrie Ionique
et Moléculaire, Villeurbanne, France,
(3) Department of Chemistry, M.I.T.
Cambridge, U.S.A.):
"High Resolution Fourier Spectrometry of
the Fluorescence Spectrum of Iodine and
Fluorescence Line Narrowing"
3.50 - 4.05 p.m.
- B6. P. Luc (Laboratoire Aimé Cotton, CNRS, Orléans, France):
"Fourier Spectroscopy in the Visible and
U-V Range", Some Examples in Molecular
Spectroscopy Field"
4.10 - 4.35 p.m.
- B7. Y. Hamada and M. Teuboi (Faculty of Pharmaceutical
Sciences, University of Tokyo, Japan):
High Resolution IR-Spectra of ClO₂: Ana-
lysis of ν_1 and ν_2 Fundamental Bands"
4.40 - 4.55 p.m.
- B8. I. Botekor (1) and Y. Hamada (2) ((1) Abteilung
Physikalische Chemie, Universität Ulm,
B.R.G., (2) Faculty of Pharmaceutical
Sciences, University of Tokyo, Japan):
"Assignment of Two Distinct Rotational
Isomers of Allylamine Through FIR Band
Analysis"
5.00 - 5.15 p.m.

89. D. Beilly, R. Ferrenq, G. Guelachvili and C. Rosetti
(Laboratoire d'Infrarouge, Associé au
CNRS, Université Paris Sud, France):
"Luminescence Spectra of Isotopic Species
of CO₂ by Fourier Spectroscopy"
5.20 - 5.35 p.m.

Afternoon Parallel Session (Chairman - M.R. Aliev)

Theory and Analysis of High Resolution Infrared Spectra

881. J.K.G. Watson (Department of Chemistry, The University
of Southampton, England):
"The Use of Empirical Vibrational Corrections
in Molecular Structure Determinations from
Zero-Point Rotational Constants"
2.00 - 2.20 p.m.
882. L. Nemes (Central Research Institute for Chemistry,
Hungarian Academy of Sciences, Budapest,
Hungary):
"Exploring an Analogy for Symmetric and Asym-
metric Top Vibrational Angular Momentum
Effects"
2.25 - 2.40 p.m.
883. S.P. Belov (1), L.I. Gerchstein (1), A.V. Maslovskij
(1), D. Papoušek (2), K. Narehari Rao (3), V. Špirko (2),
and Š. Urban (2) { (1) Institute for Applied Physics,
Soviet Academy of Sciences, Gorky, U.S.S.R.,
(2) The J. Heyrovský Institute of Physical
Chemistry and Electrochemistry, Czechoslovak
Academy of Sciences, Prague, Czechoslovakia,
(3) Department of Physics, The Ohio State
University, Ohio, U.S.A.):
"Precise Parametrization of the High Resolution
Infrared and Submillimeter Spectra of Nonrigid
Molecules - Application to Ammonia"
2.45 - 3.05 p.m.
884. V. Špirko (The J. Heyrovský Institute of Physical Che-
mistry and Electrochemistry, Czechoslovak
Academy of Sciences, Prague, Czechoslovakia):
"Electric Anharmonicity in XY₃ Pyramidal
Molecules. The Dipole Moment Function of
¹⁴NH₃ and ¹⁵NH₃"
3.10 - 3.25 p.m.
- Intermission 3.30 - 3.45 p.m.

885. V. Špirko (The J. Heyrovský Institute of Physical Chemistry and Electrochemistry, Czechoslovak Academy of Sciences, Prague, Czechoslovakia):
"Magnetic Interactions in $^1\Sigma$ States of Molecules with One Large-Amplitude Motion Coordinate. The Inversional Zeeman Effect"
3.45 - 4.00 p.m.
886. A.R. McKeller (Herzberg Institute of Astrophysics, N.R.C. of Canada, Ottawa, Canada):
"Infrared Spectroscopy of Unstable Molecules Using CO and CO₂ Lasers"
4.05 - 4.20 p.m.
887. R.L. Sase, J.S. Wells and W. J. Lafferty (National Bureau of Standards, Washington, U.S.A.):
"High Resolution Infrared Spectrum of ν_1 and ν_2 Bands of HOCl"
4.25 - 4.40 p.m.
888. J. Bellet, N. Monnanteuil, E. Willemot, D. Dangoisse, J.C. Depanneacker (Laboratoire de Spectroscopie Hertzienne L.A., Université de Lille, France):
"Study of Coriolis Interaction Between Excited Vibrational States of Light Asymmetric Rotors"
4.45 - 5.00 p.m.
889. K. Marekheri Rao (Department of Physics, The Ohio State University, Columbus, U.S.A.):
"Interpretation of the ν_1 and ν_3 Bands of PH₃"
5.05 - 5.20 p.m.

Tuesday, September 19

Morning Session (Chairmen - C. Betrencourt)

Ultrahigh Resolution Spectroscopy

- C1. C.J. Bordé (Laboratoire de Physique des Lasers, Université Paris-Nord, Villetaneuse, France):
"Hyperfine Structures of Various Molecules Studied by Ultrahigh Resolution Saturation Spectroscopy" (invited paper)
9.00 - 9.30 a.m.

- C2. L.S. Vasilenko, N.M. Dyuba, M.N. Skvortsov, V.P. Chebotayev (Institute of Thermophysics, Novosibirsk, U.S.S.R.):
"Coherent Processes in Resonant Interaction with a Pulsed Standing Wave"
9,35 - 9,55 a.m.
- C3. H. Jones (Department of Physical Chemistry, University of Ulm, B.R.D.):
"Laser-Microwave Two-Photon Spectroscopy of Some Symmetric Top and Linear Molecules"
10,00 - 10,20 a.m.
- C4. W. Radloff (Central Institute of Optics and Spectroscopy, Academy of Sciences of the G.D.R., Berlin, G.D.R.):
"Investigation of Molecular Spectra by Lamb-Dip Spectroscopy"
10,25 - 10,40 a.m.
Intermission 10,45 - 11,00 a.m.
- C5. B.D. Osipov (Institute of Spectroscopy, Academy of Sciences, Moscow, U.S.S.R.):
"High Resolution Quadrupole Spectra of Molecules"
11,00 - 11,15 a.m.
- C6. M.M. Makogon, A.M. Solodov (Institute of Atmospheric Optics, Academy of Sciences, Siberian Branch, Tomsk, U.S.S.R.):
"The Tuned Narrow-Band Nd Glass Laser for Superhigh Resolution Spectroscopy"
11,20 - 11,35 a.m.
- C7. V.P. Lopasov, M.M. Makogon, V.I. Serdjukov, A.M. Solodov (Institute of Atmospheric Optics, Academy of Sciences, Siberian Branch, Tomsk, U.S.S.R.):
"Pulsed Lasers with Dynamic Generation Frequency Sweeping"
11,40 - 11,55 a.m.
- C8. H.-H. Ritze, V. Start and E. Meisel (Central Institute of Optics and Spectroscopy, Academy of Sciences of the GDR, Berlin, G.D.R.):
"The Polarization Method - a Sensitive Technique of Saturation Absorption Spectroscopy"
12,00 - 12,15 a.m.

Afternoon Session (Chairman - W. Radloff)

High Resolution Spectroscopy of Molecules With High Symmetry, Perturbation Allowed Transitions, Multi-photon Processes

- D1. I. Ozier (Department of Physics, University of British Columbia, Vancouver, Canada):
"Distortion Moment Spectroscopy" (invited lecture)
2.00 - 2.30 p.m.
- D2. M.R. Aliev and V.M. Mikheylov (Institute of Spectroscopy, Academy of Sciences, Akademgorodok, Moscow Region, U.S.S.R.):
"Forbidden Vibrational Rotational Transitions in Polyatomic Molecules" (invited lecture)
2.35 - 2.55 p.m.
- D3. J.-P. Champion and G. Pierre (Laboratoire de Spectrométrie Moléculaire de Dijon, France):
"Computation of Harmonic and Combination Bands of Spherical Top Molecules From the Fundamental Bands Results. Application: Analysis of $2\nu_2$, $\nu_2 + \nu_4$ and $2\nu_4$ of $^{12}\text{CH}_4$ "
3.00 - 3.15 p.m.
- D4. J.-C. Hilico and J. Dogni (Laboratoire de Spectrométrie Moléculaire de Dijon, France):
"Analysis of $\nu_2 + \nu_3$ of Methane $^{12}\text{CH}_4$ and $^{13}\text{CH}_4$ "
3.20 - 3.35 p.m.
- D5. S. Brodersen (1) and A.G. Robiette (2) ((1) Chemistry Department, University of Aarhus, Denmark, (2) Department of Chemistry, University of Reading, England):
"The $2\nu_4$ Remand Band of Methane"
3.40 - 3.55 p.m.
Intermission 4.00 - 4.15 p.m.
- D6. D.N. Kozzlov, A.M. Prokhorov and V.V. Smirnov (P.N. Lebedev Physical Institute, Academy of Sciences of the USSR, Moscow, U.S.S.R.):
"Gaseous Methane $\nu_1(a_1)$ Q-Branch Spectrum with High Resolution of 0.002 cm^{-1} "
4.15 - 4.30 p.m.

D7. F. Hegelund (Department of Chemistry, University of Aarhus, Denmark):

"The High Resolution Raman Spectrum of the 2200 cm^{-1} Wavenumber Region of Gaseous Ethylene - d_4 "

4.35 - 4.50 p.m.

D8. I.N. Knyazev, V.S. Letokhov and V.V. Lobko (Institute of Spectroscopy, Academy of Sciences, Moscow, U.S.S.R.):

"Role of Weak Transitions in Multiphoton Molecule Excitation by a Strong IR Laser Field"

4.55 - 5.10 p.m.

D9. H. Finsterhölzl, G. Strey and H.W. Schrötter (Sektion Physik der Universität München, Lehrstuhl Prof. J. Brandmüller, München, B.R.D.):

"Analysis of the ν_4 -Band of Acetylene"

5.15 - 5.30 p.m.

Wednesday, September 20

Sight-Seeing Tour to Prague

Thursday, September 21

Morning Session (Chairman - I. Ozier)

Laser Spectroscopy (9.00 - 11.00)

Force Constant Calculations, Submillimeter and Microwave Spectroscopy

E1. K. Narahari Rao (Department of Physics, The Ohio State University, Columbus, U.S.A.):

"Some Aspects of Tunable Diode Laser Spectroscopy at $14 - 15\ \mu\text{m}$ "

9.00 - 9.20 a.m.

E2. V.E. Zuev, V.P. Lopasov and L.N. Sinitse (Institute of Atmospheric Optics, Academy of Sciences, Siberian Branch, Tomsk, U.S.S.R.):

"The Absorption Spectra of Linear Polyatomic Molecules in the $9240-9520\text{ cm}^{-1}$ Spectral Region"

9.25 - 9.40 a.m.

- E3. A. Mantz (Laser Analytice Inc., Lexington, U.S.A.):
Title not yet delivered
9.45 - 10.00 a.m.
- E4. W.G. Planet and G.L. Tetterer (National Oceanic and
Atmospheric Admin, National Environmental
Satellite Service, Washington, U.S.A.):
"Tunable Diode Laser Measurement of Collision
Broadened CO₂ Line Parameters"
10.05 - 10.20 a.m.
- E5. M.A. Moskalova, G.N. Zhizhin, E.V. Shomina and V.A.
Yakovlev (Institute of Spectroscopy, Academy of
Sciences, Troick, U.S.S.R.):
"IR Spectra of the Ultrathin Films Obtained
by Laser Excitation of SEW"
10.25 - 10.40 a.m.
- E6. B.M. Gorshunov (1), V.G. Koloshnikov (2), Yu.A.
Kuritsyn (2), A.P. Shotov (1), G.V. Vedeneva (2)
and I.I. Zaslavitsky (1) ((1) P.N. Lebedev Physical
Institute, Academy of Sciences, Moscow, USSR,
(2) Institute of Spectroscopy, Academy of
Sciences, Moscow, U.S.S.R.):
"High Resolution Spectroscopy with Pb_{1-x}
Sn_x Se CW and Pulsed Diode Lasers.
Applications to ¹⁴NH₃ and ¹⁵NH₃ Ammonia
Isotopes"
10.45 - 11.00 a.m.
Intermission 11.00 - 11.15 a.m.
- E7. I.M. Mills (Department of Chemistry, University of
Reading, England):
"Anharmonic Force Constant Calculations
for Linear Molecules"
11.15 - 11.30 a.m.
- E8. D.H. Whiffen (Department of Physical Chemistry,
University of Newcastle upon Tyne, England):
"The Force Fields of Cyanogen Halides"
11.35 - 11.50 a.m.
- E9. J.G. Smith and D.H. Whiffen (Department of Physical
Chemistry, University of Newcastle upon
Tyne, England):
"mm-Wave Spectra of Some C_{3v} Molecules"
11.55 - 12.10 a.m.

- E10. J. Bellet, D. Dangoisse and A. Deldalle (Laboratoire de Spectroscopie Hertzienne L.A. Université de Lille, France):
"Assignment of c.w. Optically Pumped Submillimeter Lasers"
12.15 - 12.30 a.m.

Afternoon Session (Chairman - K.Narahari Rao)

High Resolution Infrared Spectroscopy

- F1. L. Fusina (1), I.M. Mills (1) and G. Guelachvili (2)
((1) Department of Chemistry, University of Reading, England, (2) Laboratoire d'Infrarouge, Orsay, France):
"The High Resolution Infrared Spectrum of Carbonyl oxide"
2.00 - 2.30 p.m.
- F2. V. Dana (Laboratoire de Spectroscopie Moléculaire, Université P.M. Curie, Paris, France):
"Analysis of the ν_5 Band of HNO_3 "
2.35 - 2.50 p.m.
- F3. C. Betrencourt (Laboratoire d'Infrarouge, Orsay, France):
"Etude du spectre I.R. de CHF_3 vers 1200 cm^{-1} "
2.55 - 3.10 p.m.
- F4. R. Anttila (1), T. Kärkkäinen (1), J. Kauppinen (1) and G. Gréner (2) ((1) Department of Physics, University of Oulu, Finland, (2) Laboratoire d'Infrarouge, Université Paris Sud, Orsay, France):
"High Resolution Infrared Spectrum of the ν_3 Band of CD_3Br "
3.15 - 3.30 p.m.
- F5. J. Kauppinen, R. Pao and R. Anttila (Department of Physics, University of Oulu, Finland):
"High Resolution Infrared Spectrum of CO_2 Around $16 \mu\text{m}$ "
3.35 - 3.50 p.m.

Friday, September 22

Morning Session (Chairman - G. Winniewisser)

High Resolution Infrared and Microwave Spectroscopy

- G1. D. Christen (Institut für Physikalische und Theoretische Chemie, Universität Tübingen, B.R.D.):
"MW-, FIR-, and IR Investigations on Thiophosgen"
9.00 - 9.15 a.m.
- G2. D. Boucher, J. Burie, J. Demaison and A. Dubrulle (Laboratoire de Spectroscopie Hertzienne, Université de Lille, Villeneuve d Ascq., France):
"High Resolution Millimeter-Wave Spectrum of Propionitrile"
9.20 - 9.35 a.m.
- G3. L. Sztarka (Department of Physical Chemistry, Technical University of Budapest, Hungary):
"On the High Resolution Far Infrared Spectrum of Methyl-Amine"
9.40 - 9.55 a.m.
- G4. A. Ayoub, F. Kling, R. Kramo and J. Ming (Institute of Isotopes, Hungarian Academy of Sciences, Budapest, Hungary):
"Spectroscopic Study of Compounds Labeled with ^{14}C "
10.00 - 10.15 a.m.
- G5. J. Mink, M. Gál and L. Nemes (Institute of Isotopes, Hungarian Academy of Sciences, Budapest, Hungary):
"Rotational Spectra of D_2Se "
10.20 - 10.35 a.m.
- G6. W. Prussek, J. Galica and S. Gierczak (Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland):
"Measurement of Self-Broadening of Methanol Microwave Lines"
10.40 - 10.55 a.m.

- G7. E.A. Cohen (Earth and Space Sciences Division, Jet Propulsion Laboratory California Institute of Technology, Pasadena, U.S.A.):
"Parameters Describing the Inversion Spectra of $^{14}\text{NH}_3$ and $^{15}\text{NH}_3$ in the ν_4 Level"
11.00 - 11.15 a.m.
- G8. K. Serka (Institute of Inorganic Chemistry, Slovak Academy of Sciences, Bratislava, Czechoslovakia):
"Effect of Ion-Dipole Interactions on Width of Vibrational Lines in Liquids"
11.20 - 11.35 a.m.
Intermission 11.40 - 11.35 a.m.

Time reserved for post-deadline papers

SOCIAL PROGRAM

Monday:

Cocktail Party 7.00 p.m.

Tuesday:

Barbecue (Banquet) 7.30 p.m.

Wednesday:

Sight-Seeing Tour to Prague 9.00 a.m.

Thursday:

Chamber Music 8.00 p.m.
(The Talich Quartet)

Enclosed you find the visa application form for your trip to the Vth International Seminar on High Resolution Infrared Spectroscopy. The application form should be presented at the Czechoslovak Consulate. Participants at the Conference are not subject to the regulation requiring a minimum exchange per day for tourist.

The lecture will start on Monday, September 18th, at 9.00 a.m. The transports from Prague to Liblice and Mělník will be provided:

on Sunday, September 17th at 3.00 p.m.

and at 5.30 p.m.

on Monday, September 18th at 7.30 a.m.

from The J. Heyrovský Institute of Physical Chemistry and Electrochemistry Prague 6, Flemingovo náměstí No.2. (see the map on the last page).

The Meeting will end on Friday, September 22th in the afternoon. Transports from Liblice will start at 2.00 p.m. Should your travel plans require a hotel reservation in Prague before or after the Meeting or if you wish to be accommodated in Prague during the Seminar, please, contact our Travel Agency ČEDOK, Congress Center, Příkopy 18, 111 35 Prague 1. Unfortunately, it is impossible for the Institute to secure any accommodation.

The Organizing Committee also cannot secure any transport of participants in Prague before or after the Conference except the transport from Prague to Liblice and back.

It is necessary that the conference fee be remitted (in US dollars or in other national currencies according to the official exchange rates) before July 31st, 1978, by transfer of money directed to our bank account No.03-04-2025-3 at the Státní banka československá (Czechoslovak State Bank), pob. 4, Nuselská 94, 140 00 Praha 4. A 10% surcharge to the conference fee will be required from the participants who will not pay the fee before July 31st.

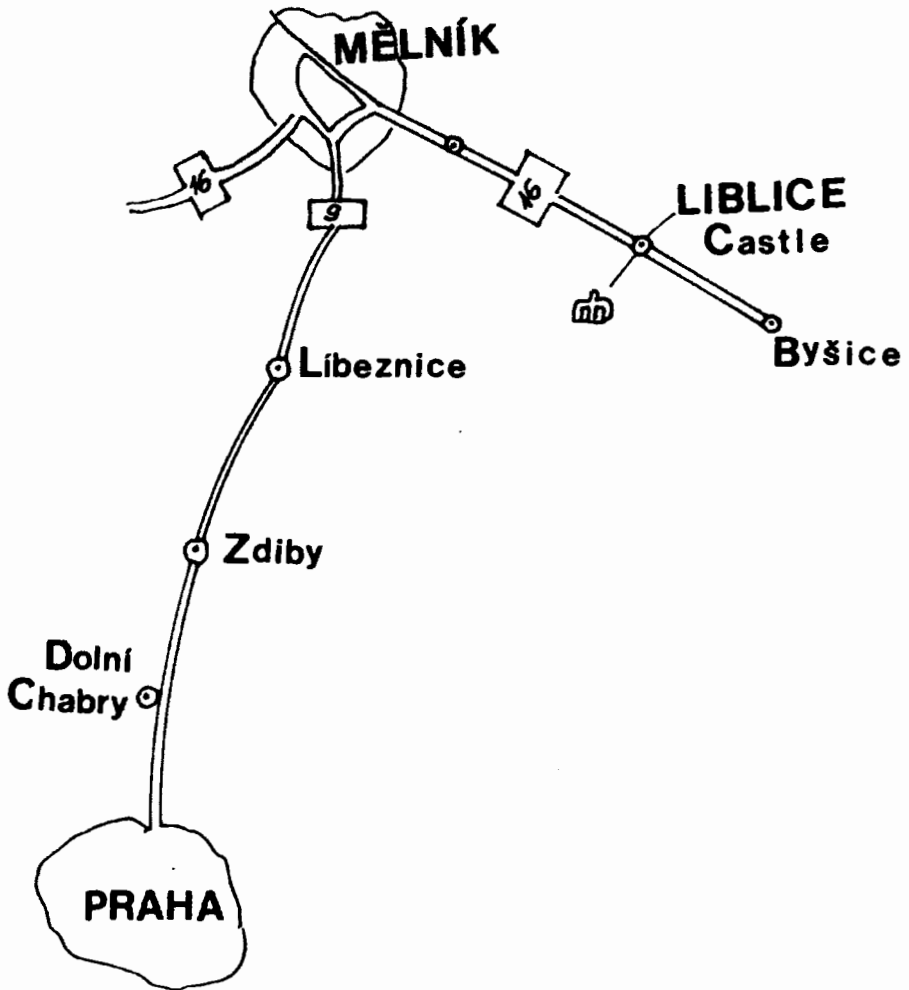
We should like to inform you that the nearest exchange-office from Liblice is at Mšlník, náměstí Míru (office hours: Monday till Friday 8.00 - 11.30 a.m.).

On behalf of the Organizing Committee

D. Papoušek

V. Špirko

HOTEL "LUDMILA" IN MĚLNÍK IS SITUATED
ON THE VERY BEGINNING OF THE CITY MĚLNÍK
RIGHT ACROSS THE SUGAR HOUSE



1. Hotel International
2. Department of Molecular Spectroscopy,
The J. Heyrovsky Institute of Physical Chemistry
and Electrochemistry, Czechoslovak Academy
of Sciences, Flemingovo n. 2, Prague 6
3. METRO - Line A (Terminus "Leninova")
4. TRAM - Station "Lotyšské"
5. BUS No. 119 - Station (Airport → Centrum)
6. BUS No. 125 - Station (from Terminal)

