



PROGRAM

International Conference on
Tunable Diode Laser Spectroscopy

9 - 11 July 1995

Moscow, Russia

Organized by

General Physics Institute, Russian Academy of Sciences, Moscow, Russia
Institute of Atmospheric Optics, Russian Academy of Sciences, Tomsk, Russia

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Schedule of Sessions

July 9, 1995

09:00 - 13:30 Moscow Tour

14:30 Opening

15:00 - 17:00 Session A

Chair: R. Koga

A1 15:00-16:00 R. U. Martinelli (Invited speaker)

"Single-mode tunable III-V semiconductor diode lasers with wavelengths from 0.76 to 2 μm "
(R.U.Martinelli, R.J.Menna, P.K.York, D.Z.Garbuzov, H.Lee, J.H.Abeles, N.Morris, J.C.Connolly, S.Y.Narayan, D. E. Cooper, C. B. Carlisle, H. Riris)

A2 16:00-17:00 A. Valentin (Invited speaker)

"Two studies using TDL with frequency controlled by a stepping Michelson interferometer."
(A. Henry, M. Margottin-Malcoeu and A.Valentin)

17:30 - 20:00 Poster Session B

Chair: Yu. A. Kuritsyn

B1 B. A. Tikhomirov

"Measurements of methane and formaldehyde spectra using TDLS with photoacoustic cell."

B2 M. R. De Backer, D. Courtois, Yu. N. Ponomarev, B. A. Tikhomirov

"Combinated spectrometer with the tunable (1040 - 1140 cm^{-1}) continuous wave diode laser"

B3 M. Tacke, A. Lambrecht, M. Simpfendorfer, C. Thiebeaux, D. Courtois, A. Delahaigue, P. Woods, N. A. Martin

"Developements of mid-infrared diode lasers for ground based atmospheric measurements"

B4 Z. Feit

"Preliminary performance characteristics of MQW lead salt lasers."

B5 N. V. Zotova, S. A. Karandashov, B. A. Matveev, N. M. Stus', G. N. Talalakin

"Tunable mid-IR diode lasers based on InGaAsSb/InAsSbP DH"

B6 Yu. P. Yakovlev, A. Popov, M. Stepanov, V. Sherstnev

"Progress in GaInAsSb lasers for 2-4 μm wavelength range"

B7 S. A. Malishev

"Photodetector for emission laser test in range 1.50 - 1.55 μm ."

B8 V. P. Duraev, A. V. Melnikov

"Single frequency DFB lasers for high resolution spectroscopy"

B9 C. Ball, F. De Lucia, D. Risal, A. Ruch, A. W. Mantz

"Performance characteristics of a low temperature cell which is cooled by a closed cycle helium refrigerator"

B10 D. R. Willey, K. A. Ross, V. Dunjko, A. W. Mantz

"Tunable diode laser spectroscopy of CH_3F in an equilibrium cell maintained at 7.5 Kelvins"

B11 G. Albinus, Cl. Herrmann, G. Richter

"Refinement of bandwidth-limited diode laser spectroscopy by adiabatic chirp"

B12 F. Taucher, C. Weitkamp, H. K. Cammenga, S. Bauerecker

"Diode laser spectroscopy and enclosive flow cooling - concept of an integrated multireflection optics."

B13 V. K. Kononenko

"Tunable quantum-well sources with a broad spectral bandwidth."

B14 M. Yu. Kataev

“Numerical simulation of design, instrumentation and data processing procedures for spectrophotometers and photoacoustic spectrometers with diode lasers.”

B15 M. Yu. Kataev, O.Yu.Nikiforova

“Retrieval of the spectral-line shift and broadening coefficients from measurements data on frequency derivative of the spectrum”

18:00 - 20:00 Reception

July 10, 1995

09:30 - 11:30 Session C

Chair: P. Werle

C1 09:30-10:30 V. Velichanskii (Invited speaker)

“Highly coherent diode lasers in atomic spectroscopy”

C2 10:30-11:30 Z. Feit (Invited speaker)

“MBE grown buried heterostructure separate confinement multiple quantum well

Pb_{1-x}Eu_xSe_yTe_{1-y}/Pb_{1-y}Sn_yTe diode lasers for high resolution spectroscopy”

(Z.Feit, M.McDonald, P.Mak)

11:30 - 13:00 Lunch break

13:00 - 15:00 Session D

Chair: A. Mantz

D1 13:00-13:30 I. Pak

“Double modulation technique in pulsed jet experiments with tunable diode lasers”

(I. Pak, M. Hepp, R. Philipp, R. Schieder, G. Winnewisser)

D2 13:30-14:00 S. N. Andreev

“Influence of VV-processes on collision broadening of molecular infrared spectral lines in nonequilibrium plasma.”

(S. N. Andreev, V. N. Ochkin, S. Y. Savinov, N. V. Slobozhanov)

D3 14:00-14:30 R. Muecke

“Application of high frequency modulation spectroscopy to the measurement of atmospheric trace gases”

(R. Muecke, P. Werle)

D4 14:30-15:00 A. A. Popov

“Single-frequency InAsSb lasers emitting at 3.4 μm”

(A. A. Popov, V. V. Sherstnev, Yu. P. Yakovlev, R.Muecke, P.Werle)

15:00-16:00 Coffee break

16:00 - 18:30 Poster Session E

Chair: V. Velichanskii

E1 A. I. Nadezhdinskii, A. Berezin, I. Adamovskaya, S. M. Chernin, N. Ya. Sobolev,

T. B. Razumikhina, V. G. Koutniak

“Tunable diode laser based system for methane detection.”

E2 A. I. Nadezhdinskii

“Tunable diode laser based systems for analytical applications”

E3 A. I. Nadezhdinskii

“Tuning curve of diode laser”

E4 A. I. Nadezhdinskii

“Resonance effects in molecular spectra collision broadening and shift”

- E5 A. I. Nadezhdinskii**
“Precise line shape measurements by tunable diode laser”
- E6 A. I. Nadezhdinskii**
“Soft” and “hard” collision models. Experimental observation of difference in spectral line shape
- E7 G. Baldacchini, F. D’Amato, M. De Rosa; A. I. Nadezhdinskii, N. Lemekhov, N. Ya. Sobolev**
“Correlation between CO concentration, local weather, and human activities in Frascati area.”
- E8 M. V. Spiridonov, V. G. Koutniak**
“Development and experimental testing of electronics for tunable diode laser spectroscopy”
- E9 K. L. Moskalenko, M. V. Spiridonov, V. G. Koutniak, A. I. Nadezhdinskii**
“Detection of NO in exhaust of a driving car.”
- E10 M. A. Kerimkulov, A. I. Nadezhdinskii, M. V. Spiridonov, Yu. K. Zadorozhny**
“Near-infrared diode laser spectroscopy of a hydro-carbon glow discharge plasma”.
- E11 M. V. Spiridonov, D. Toebaert**
“Diagnostics of a CO₂ laser glow discharge plasma at fast axial flow conditions”
- E12 K. L. Moskalenko, A. I. Nadezhdinskii**
“Outdoor, indoor, and human breath content measurements of ammonia by tunable diode laser spectroscopy technique”
- E13 S. M. Chernin**
“Sixpass mirror system with the largest aperture”
- E14 S. M. Chernin**
“Multipass matrix mirror system with a fully stable exit image”
- E15 S. M. Chernin**
“Small matrix mirror system with large aperture”

19:00 Banquet

July 11, 1995

09:30 - 13:00 Session F

Chair: Blanquet

- F1 09:30-10:30 E. A. Whittaker (Invited speaker)**
“Combining wavelength and frequency modulation for fringe-free absorption spectroscopy”
- F2 10:30-11:30 H. Riris (Invited speaker)**
“Digital signal processing for diode laser based sensors”
 (H.Riris, C.B.Carlisle, R.Warren, L.Carr, D.E.Cooper)

11:30-12:00 Coffee break

- F3 12:00-13:00 F. S. Pavone (Invited speaker)**
“Coherent frequency control of DBR and DBF semiconductor diode lasers: applications to spectroscopy”
 (A. Arie, P. Cancio, F. S. Pavone, M.Prevedelli, M. Inguscio)

13:00 - 14:00 Lunch break

14:00 - 17:00 Poster Session G

Chair: Yu. P. Yakovlev

- G1 P. Werle**
“Fluctuation of the Optical Pathlength in TDLAS systems: interferometric measurements using a quasi single sideband homodyne technique”

- G2** R. Koga, M. Wang, O. Wada, N. Kagawa
 “Absorption spectrometry of atmospheric methane density: use of quick scanning and DSP to suppress scintillation”
- G3** V. A. Chorshev, G. A. Maksimov, P. G. Sennikov
 “The Measurement of the broadening of the 1675.172 cm⁻¹ line of water in gaseous oxygen, argon, helium, germane hydrogen selenide and ammonia.”
- G4** A. Zybin, Ch. Schnurer-Patschan, K. Niemax
 “Wavelength modulation diode laser atomic absorption spectrometry in modulated low-pressure helium plasmas for element selective detection in gas chromatography”
- G5** N. Sadeghi, I. Pak
 “Radiative lifetime of the O(⁵S₂) metastable state and collisional coupling between the O(⁵P_{1,2,3}) fine structure sub-levels”
- G6** H. Groll, Ch. Schnurer-Patschan, Yu. A. Kuritsyn, K. Niemax
 “Wavelength modulation diode laser atomic absorption spectrometry in analytical flames”
- G7** V. V. Liger, V. M. Krivtsov, E. P. Snegirev, Yu. A. Kuritsyn
 “Diode laser absorption spectrometry of Cl in glow discharge: comparison of registration methods”
- G8** S. N. Andreev, S. Yu. Savinov
 “Simulation of a vibrational-rotational absorption spectra of CO₂ in nonequilibrium state in the 4.5 μm region”
- G9** F. Raynaud, A. Babay, V. Lemaire, B. Lemoine, F. Rohart
 “A high precision technique for pressure line shifts measurements: Application to NH₃ and HCN.”
- G10** Gh. Blanquet, B. Lance, J. Walrand, J. P. Bouanich
 “Absolute line intensities in the ν₂ band of ¹²CH₃³⁵Cl at 7.5 μm.”
- G11** J. Walrand, G. Blanquet, J.-P. Bouanich
 “N₂ - broadening coefficients in the ν₃ band of CH₃D.”
- G12** M. Lepere, G. Blanquet, J. Walrand
 “Absolute lines intensities of ν₃ band of ¹²CH₃F at 9.6 μm.”
- G13** J. Matuszeski, M. D. Marshall
 “Diode laser spectrum of the ν₉ fundamental band of jet-cooled CH₂F₂”

17:00 - 18:00 Discussion

18:00 - 18:30 Closing remarks