



ZDENEK HERMAN

**COLLEAGUES AND FRIENDS
IN
CHEMISTRY AND PHYSICS**

1969 2005

DRAWINGS

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IN
CHEMISTRY AND
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1969 – 2005

DRAWINGS

II.

EUROPE

II. EUROPE

1. The SRMion Network: Paul-Marie Guyon, Chairman, Orsay (1994)
2. The SRMion Network: Gérard Mauclair, Treasurer, Orsay (1994)
3. The SRMion Network: Davide Bassi and Paolo Tosi A.D. 1995, Trento (1995)
4. The SRMion Network: Tilmann Märk, Innsbruck (2002)
5. The SRMion Network: Adi Ding, Berlin (1995)
6. The SRMion Network: Dieter Gerlich, Chemnitz (1996)
7. The SRMion Network:: Odile Dutuit, Orsay (1994)
8. The SRMion Network: Extra-network visitor John Eland, Oxford (1996)
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40. Ersin Yurtsever and Attila Askar (Istanbul) – the organizers of the MOLEC 02 (2002)
41. Quantum chemists: S. Peyerimhoff, Bonn (1997), W. Kutzelnigg, Bochum (1979), R. Ahlrichs, Karlsruhe (1979), Hans Lischka, Wien (1979), C. Weiss, Leipzig (/1979), W. Jakubetz, Wien (1979), L. Zülicke, Berlin (1979)
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44. NATO Reaction Dynamics Meeting, Balatonfoldvár, 2003: Millard Alexander (Maryland) deep in the Balaton Lake
45. NATO Reaction Dynamics Meeting, Balatonfoldvár, 2003: E. Nikitin (Haifa), A. Lagana (Perugia), D. Bosanac (Zagreb), G. Nyman (Göteborg), V. Aquilanti (Perugia), M.V. Basilevski (Moscow), U. Manthe (München)
46. Bob (R.E.H.) Clark, I.A.E.A. Vienna
47. I.A.E.A. Vienna, 2004: P. Defrance (Louvain-la-Neuve), Š. Matejčík (Bratislava), Ioan Schneider (Le Havre)
48. The CARNET EU Network 1994-1999: K.-H. Hoffmann (Chemnitz), B.

- Andresen (Copenhagen), L. Diosi (Budapest), R. Mrugala (Torun), Alex De Vos (Gent), P. Landsberg (Southampton), H. Farkas (Budapest), B.A. Månsson (Karlstad), S. Sieniutycz (Warsaw)
49. People of SASP 2002, Going/Kitzbühl, Austria: C. Lifshitz (Jerusalem), C.J. Latimer (Belfast), D.K. Böhme (Toronto), M.R. Flannery (Atlanta), M. Quack (Zürich).
50. People of SASP 2002, Going/Kitzbühl, Austria: I. Dotan (Haifa), W.A. Brand (Jena), B. Farizon (Lyon), G. von Helden (Nieuwegein), P. Defrance (Louvain), S.D. Price (London)
51. Advisory Board of the Czech EURATOM Association: M. Tendler, M. Endler, G. Van Oost, C. Hidalgo, J. Linke, M. Valovic, HP. Winter, J. Stöckel, Y. Peysson.
52. Italians at the Czechoslovak-Italian Symposium on Catalysis, Liblice Castle, 1981: F. Piacenti, S. Carrà, F. Trifirò, A. Iannibello, N. Pernicone, F.eppe
53. The founders of MOLEC: J.P. Toennies and F. Gianturco, 2006



The SRMion Network: Paul-Marie Guyon ,Chairman, Orsay



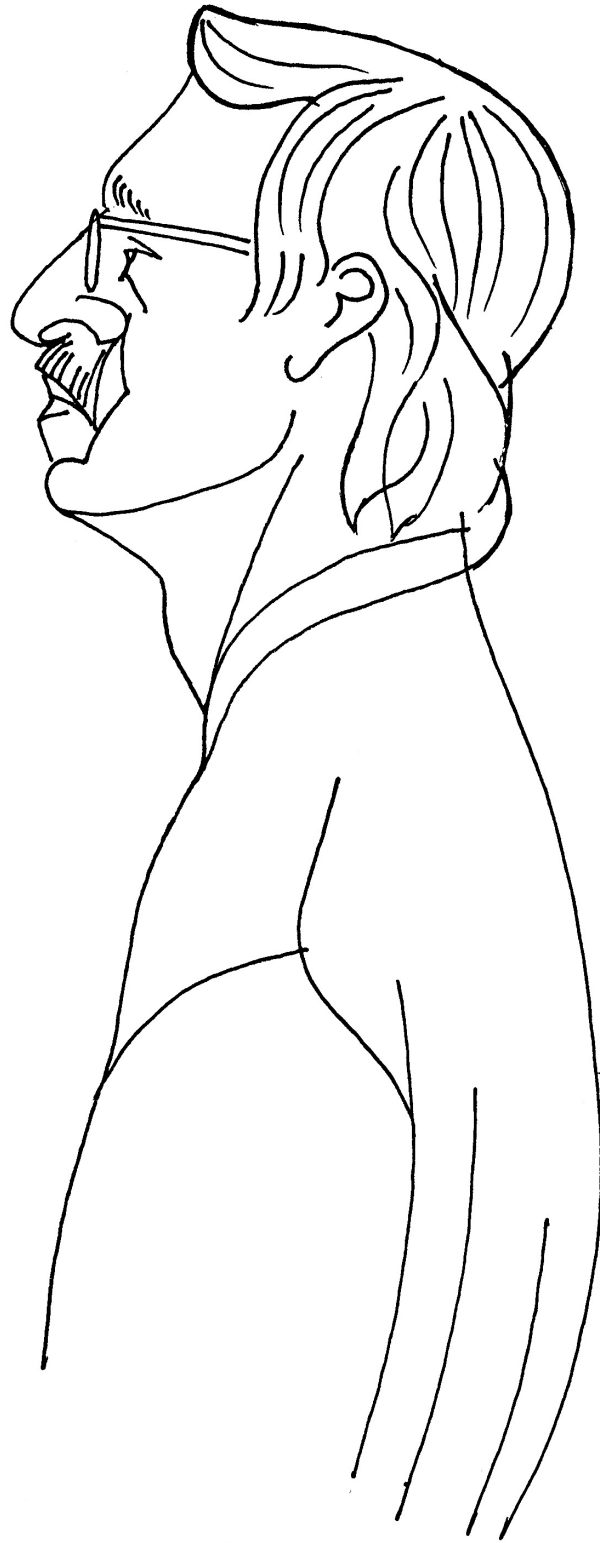
The SRMion Network: Gérard Mauclair, Treasurer, Orsay



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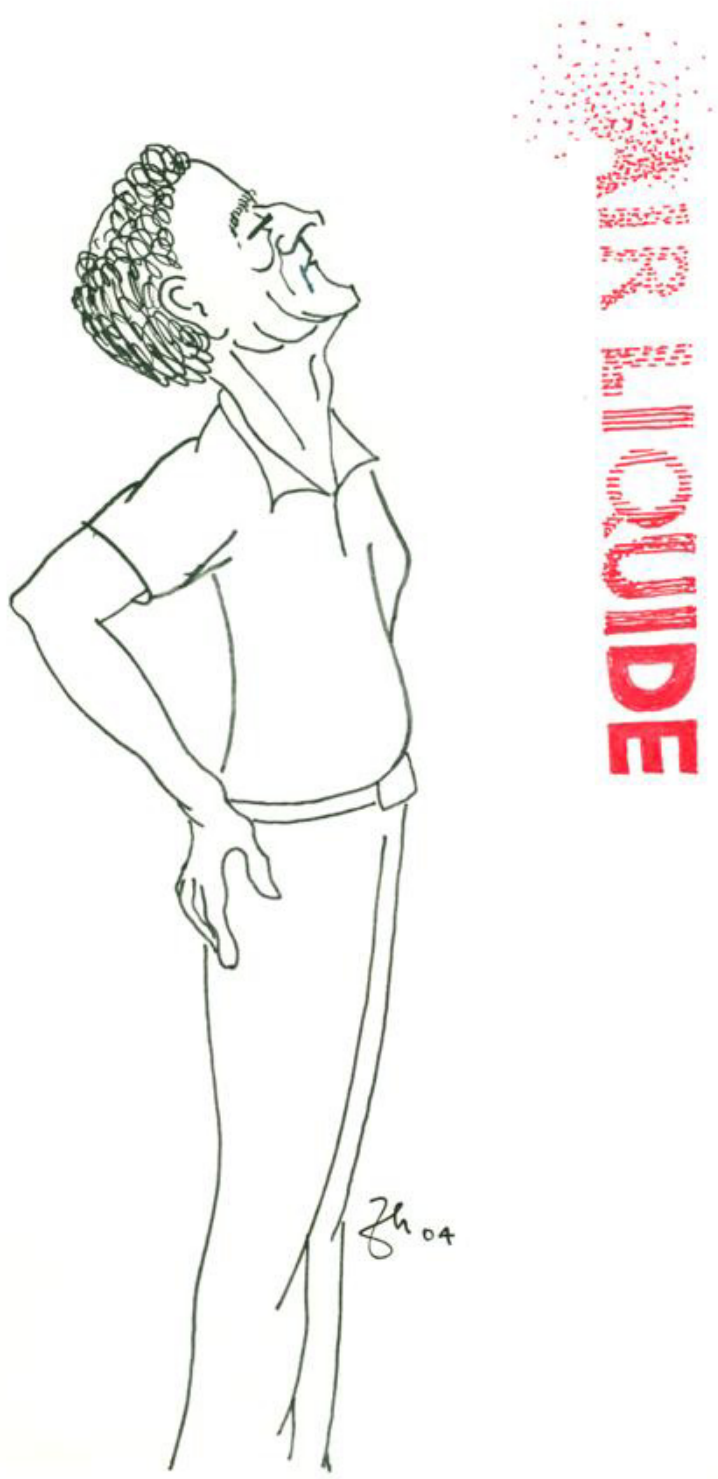
The SRMion Network: Extranetwork visitor John Eland, Oxford



Danielle Dowek (Orsay) as Adele Bloch



Victor Sidis (Orsay)



Tom Govers (Paris)



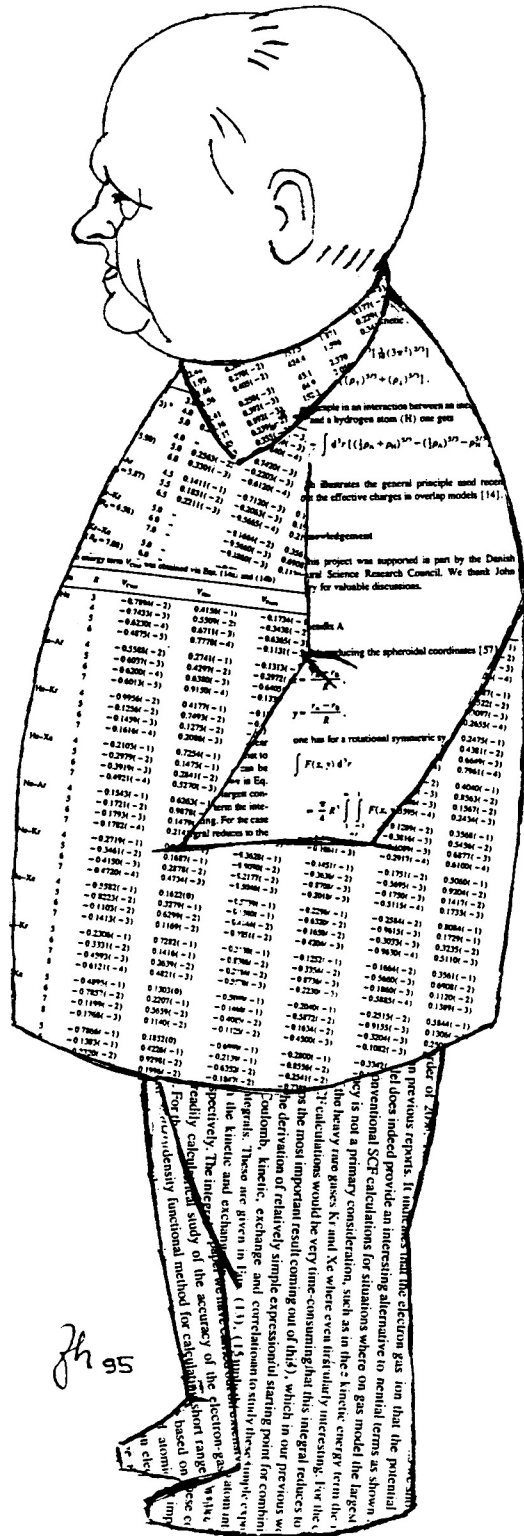
Ron MacCarroll (Paris), tied and untied



John Avery, Copenhagen



Gert Billing, Copenhagen

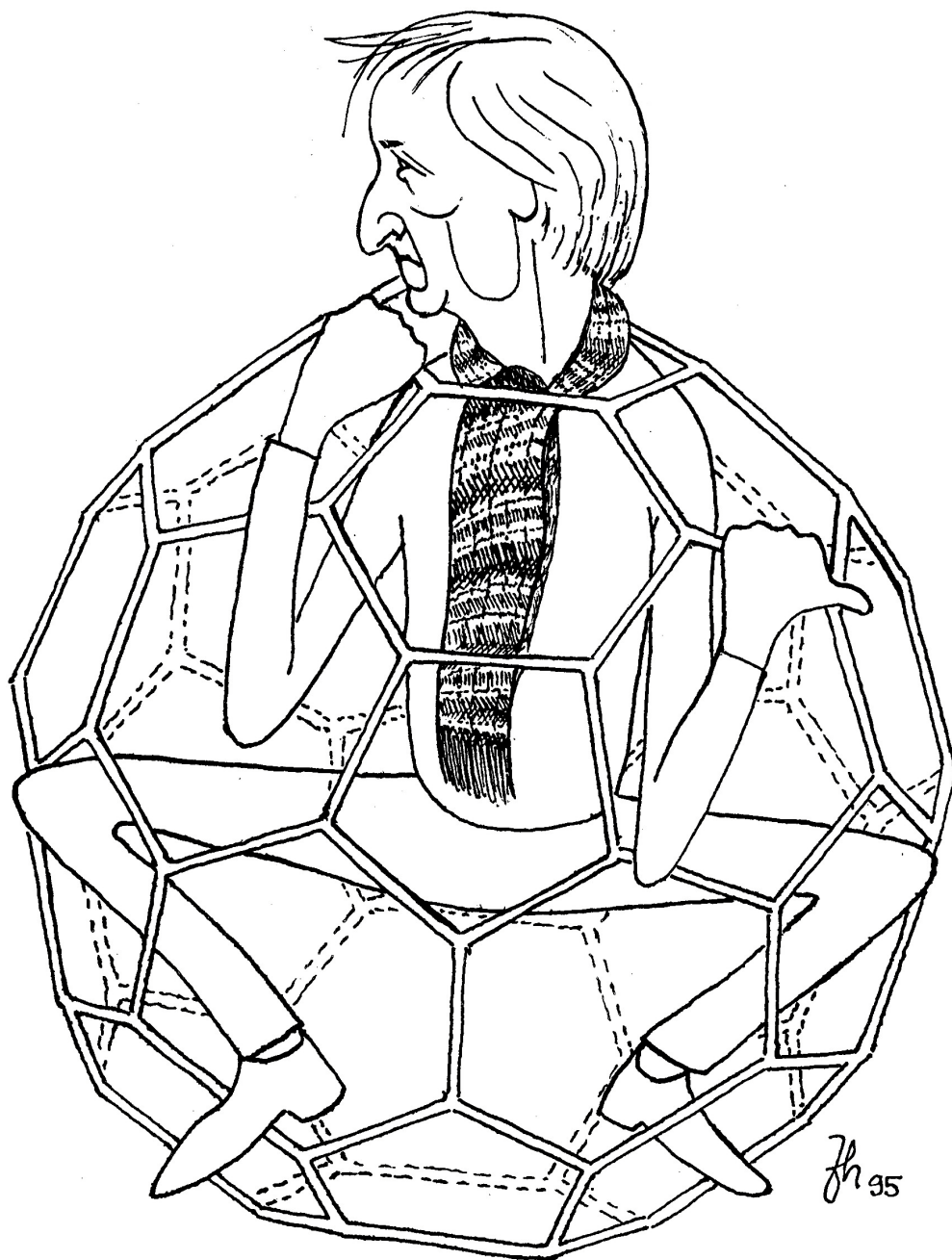


Jh 95

Carl Nyeland, Copenhagen



Helmut Schwarz, Berlin



Endohedral He(lmut)



*Peter Toennies (Göttingen) and Giorgio Benedek (Milano)
struggling with the surface lattice dynamics*



8 July 1994

Crossed beam collisional excitation of pyrimidine from the laser-prepared T₁ state into the S₁ state

Ch. Ottinger, A.F. Vilcsok

Max-Planck-Institut für Strömungsforschung, Bunsenstrasse 10, 37071 Göttingen, Germany

Received 14 March 1994

Metastable ions in the Mass Spectra of Propane and Deuterated Propane

Ch. Ottinger
Physikalisches Institut für Universitätslehre, Göttingen, Germany
(Received 13 Feb 1994)

The metastable transitions of the three carbon isotopes were investigated. A very strong isotope effect was observed. A possible competitive process was identified. Only secondary peaks were seen in the mass spectra. The present ion occurs prior to the secondary reactions in the ion atmosphere.

INTRODUCTION

In a previous paper, delayed decompositions (so-called "metastable transitions") of excited ions formed by electron impact from methane and the four deuterated methanes were investigated (using an apparatus described in Ref. 2). All of these five gases exhibited metastable transitions which showed a strong isotope effect. The only D loss observed occurred in the case of CD₄, while in all other cases only metastable loss of H was found. This was later explained by a slight difference in activation energies of H and D loss due to different zero-point energies from the characteristic intensities of the transitions followed from the symmetry factors which could be derived from the reaction pattern of the various reactions; with an increasing number of possibilities for choosing the reaction coordinate, the metastable intensity decreased, as is normalized to the ordinary fragment intensity, as in Ref. 1, and as expressed in the percentage of the total ionization. The comparison of CH₄ and CD₄ is a typical example of the primary isotope effect.

Luminescent charge transfer with Ar, N₂, H₂, D₂ and CO

A. Ehbrecht, N. Mustafa, and C. Ottinger
Max-Planck-Institut für Strömungsforschung, Göttingen, Germany

(Received 5 August 1996)

Luminescent charge transfer target species in a scattering experiment. The cross section for CO⁺(B²Σ⁺ ← X²Σ⁺) was measured. In the case of the projectile and to the CO⁺(A¹Π ← X²Σ⁺) emission. Similarly, with N₂ as a target species, the cross sections for CO⁺(B²Σ⁺) can be explained by Franck-Condon factors. At low energy the vibrational energy spectra, possibly excitation in all cases of electron capture rates.

1. INTRODUCTION

The existence of doubly charged ions established in mass spectrometry in the early part of this century.^{1,2} Yet detailed electronic structure, stability, and behavior only recently become available. This progress both in experimental and theoretical methods during the last decade. At the present time, doubly charged molecular ions are increasingly being investigated. The interest of experimentalists and theoreticians in doubly charged molecular ions is for fundamental reasons for further understanding of the behavior of a species. The doubly charged molecular ions are of great importance as elementary systems. Single electron ionization has been studied over a wide range of conditions, from thermal to many keV, augmented by translational energy measurements which often allow the identification of electronic states and thus have opened up new fields in molecular ion kinetics and dynamics. However, doubly charged molecular ions have only recently been

Electronically chemically molecule ex

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Molecular Beam Study of the Collision-Induced Intramolecular Energy Transfer CO(a¹Σ⁺, d¹Δ)

Ch. Ottinger* and A. F. Vilcsok

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D. D. Xu

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Received: March 21, 1993; In Final Form: August 14, 1993*

The collision-induced intramolecular energy transfer from CO(a¹Π) to CO(a¹Σ⁺) and CO(d¹Δ) was studied under single-collision conditions in a beam-gas-cell arrangement. CO molecules were excited into the lowest vibrational state of the CO(a¹Π) in the expansion region of the CO(a¹Σ⁺) supersonic beam. The relative vibrational distribution of CO(a¹Π) was obtained from the spontaneous beam afterglow (AG) emission spectra of the CO(a¹Π) ← X²Σ⁺ Cameron bands. Additional emission of the CO(a¹Σ⁺) and CO(d¹Δ) states was observed to result from collisions with a target gas (He, Ne, Ar, Kr, and Xe) in a cell. This collision-induced energy transfer (CIAE) is due to near-resonant intramolecular energy transfer CO(a¹Π) → CO(a¹Σ⁺) and CO(a¹Π) → CO(d¹Δ). They were obtained by normalizing the emission intensities of the product CO(a¹Σ⁺) and CO(d¹Δ) levels to the CO(a¹Π) reactant level. Spectral overlaps of the product CO(a¹Σ⁺) and CO(d¹Δ) levels to the CO(a¹Π) level, according to the energy gap between the reactant and the product states in a particular level exhibits a very irregular band contour, with intense superimposed spikes max.

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studies of collisional coupling between the low-lying triplet states (a¹Π, a¹Σ⁺, d¹Δ, or others). One somewhat interesting example is the measurement of fast vibrational relaxation of CO(d¹Δ), ascribed to intermolecular transfer to CO(a¹Σ⁺).^{1,2} On the other hand, from purely spectroscopic work, very detailed information has been obtained on the perturbation of the lying triplet states^{3,4} and between the triplet states and the singlet state A¹Π.⁵⁻⁸ The perturbed molecular constants and transition parameters were obtained by means of molecular spectroscopy. It was concluded that the observed low-lying A¹Π bands were due to the interactions between the A¹Π and the a¹Π and d¹Δ states, respectively.^{1,9} Radiative lifetimes of individual rotational line structure levels of A¹Π and neighboring triplet states¹⁰ have also yielded the perturbation parameters. Figure 1, adapted from ref. 10 shows the perturbation curves for several CO electronic states.

In this work we report on the collision-induced coupling of the CO triplet state a¹Π to the triplet states a¹Σ⁺ and d¹Δ. This is the first such study under single-collision conditions. One could expect that the investigation of collision-induced energy transfer from CO(a¹Π) to CO(a¹Σ⁺) and CO(d¹Δ) would be of great interest and importance for the understanding of the ordering of states in the CO electronic system.

Stages of Ionic versus Neutral Chemoluminescence Investigation of Optical versus Mass Spectrometry Reactions
1. Molecular Reactions
2. Analysis
3. Configuration and Type of Experiments
4. Status Description
5. Results
6. Conclusions
7. Acknowledgments
8. References
9. Hydrocarbons
10. Hydrocarbons

"That pessimist!" they say, "he peers fixed at the gloom of future years." This judgement, though, seems not quite fair - it is those gloomy years that stare!

Ch Ottinger



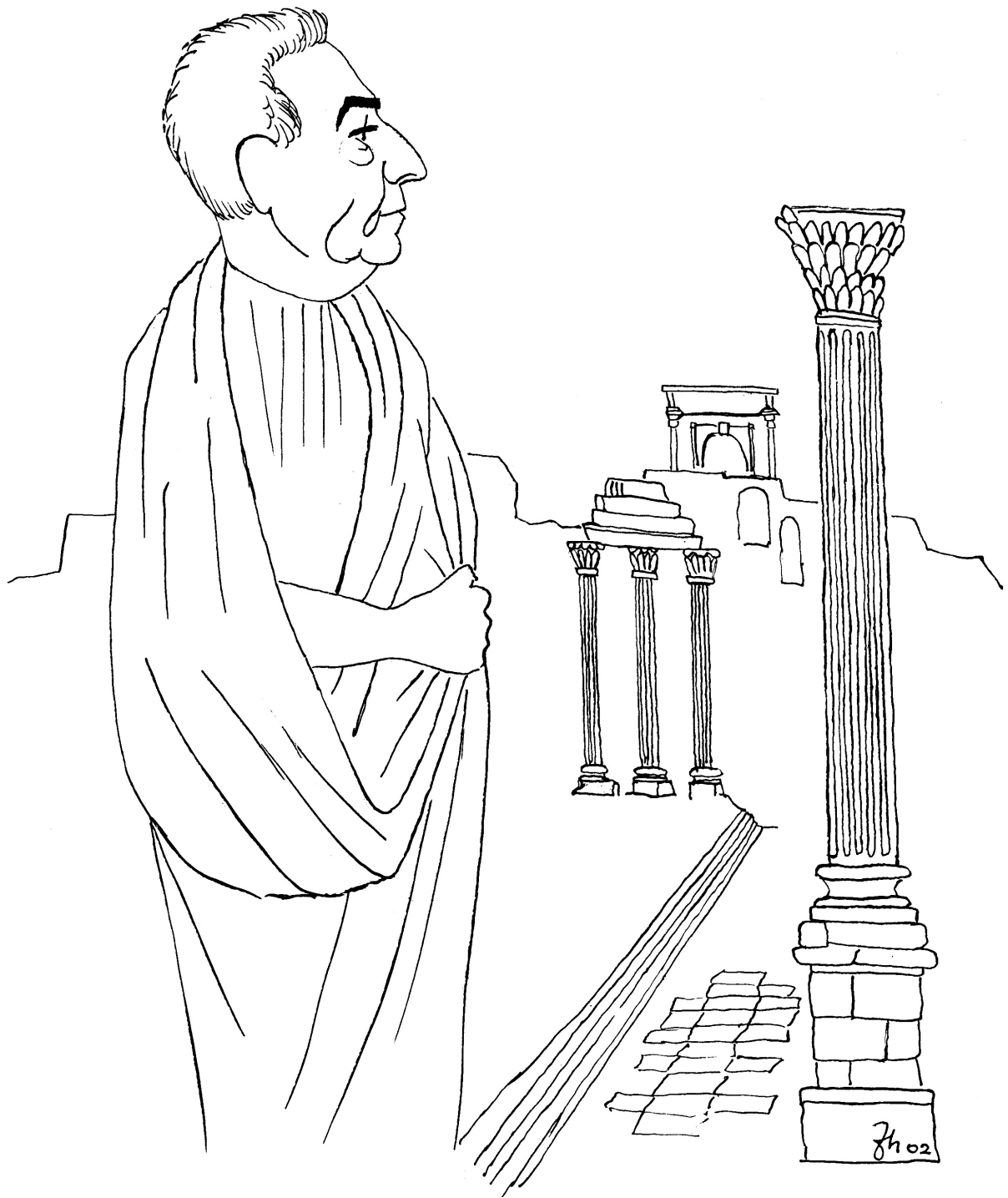
Jürgen Troe (Göttingen)



Franco Giaturco (Rome) as a young man



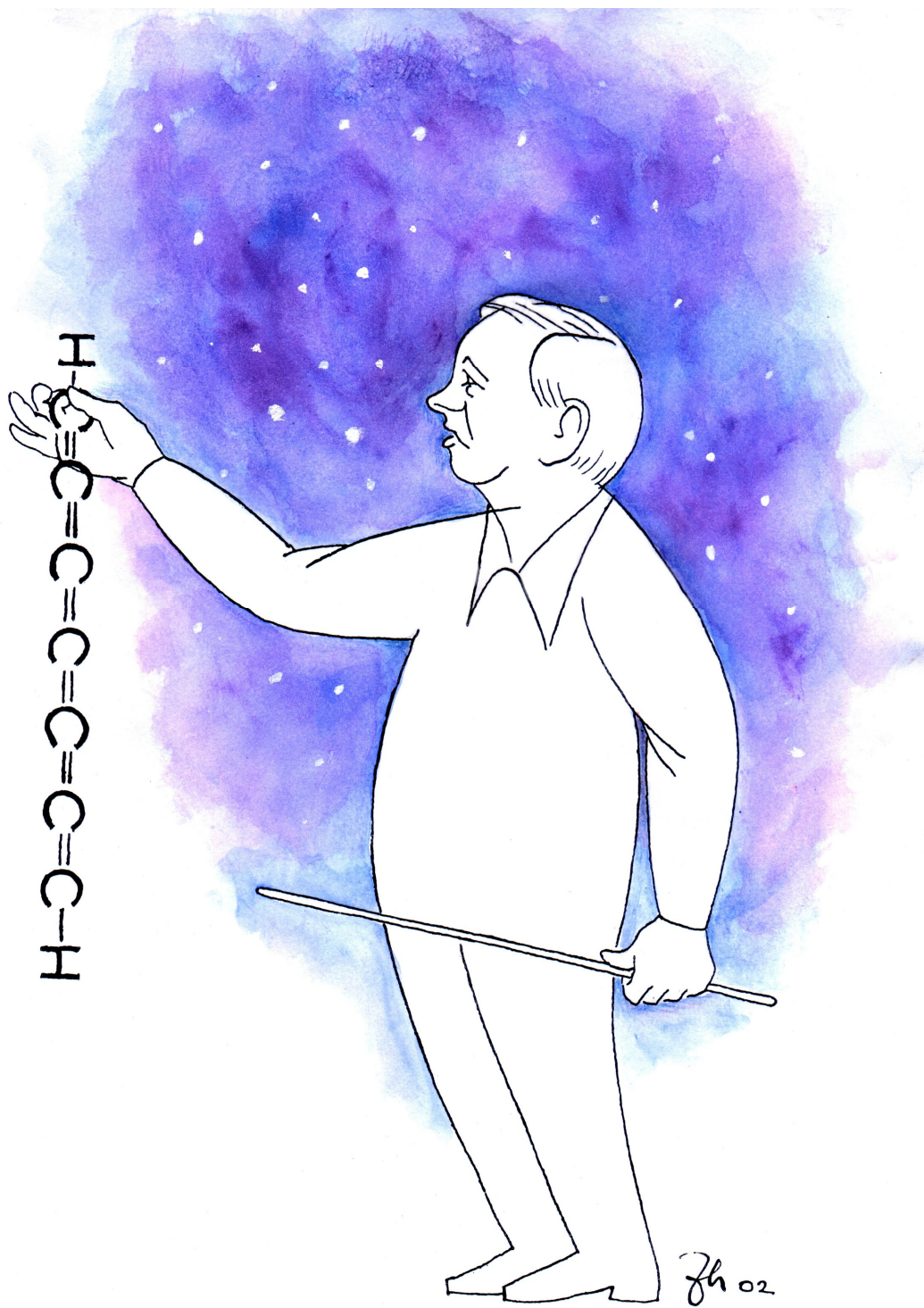
Franco Gian-Turco (Rome)



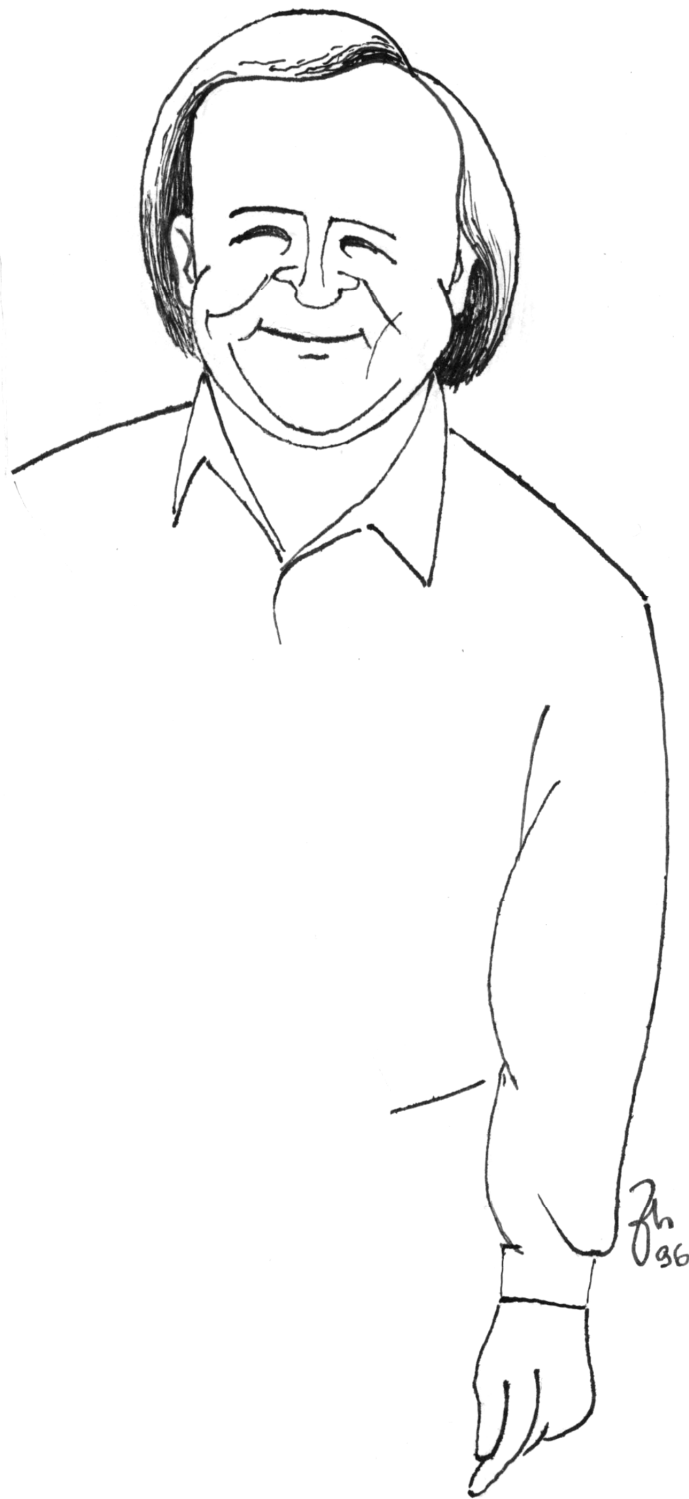
Franco Giaturco at home in Rome



*The two Gentlemen of Madrid:
Gerardo Delgado-Barrio and Pablo Villarreal*



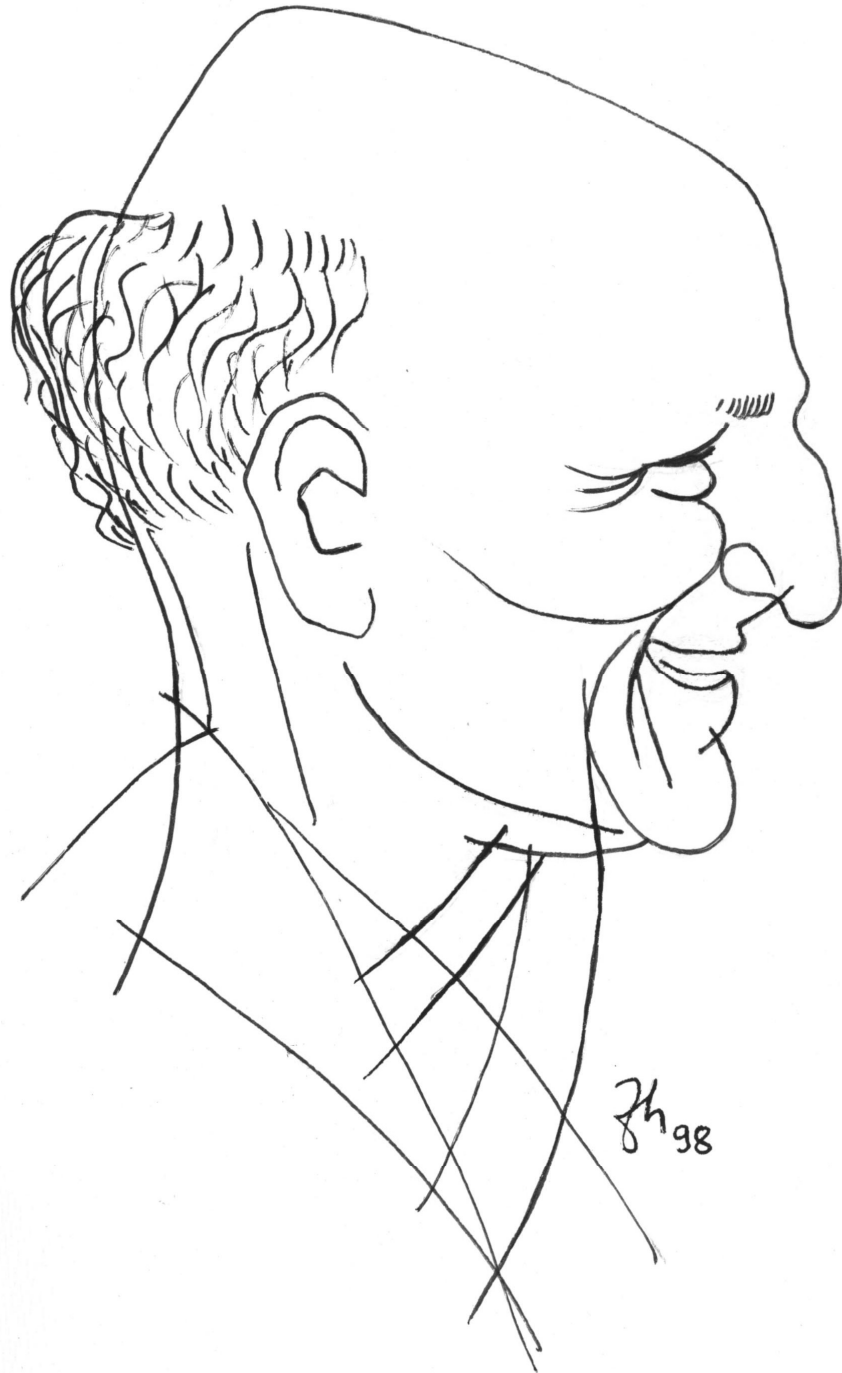
John Maier, Basel



John Maier (Basel), hairstyle 1996



David Smith (Keele University): Ions in collision



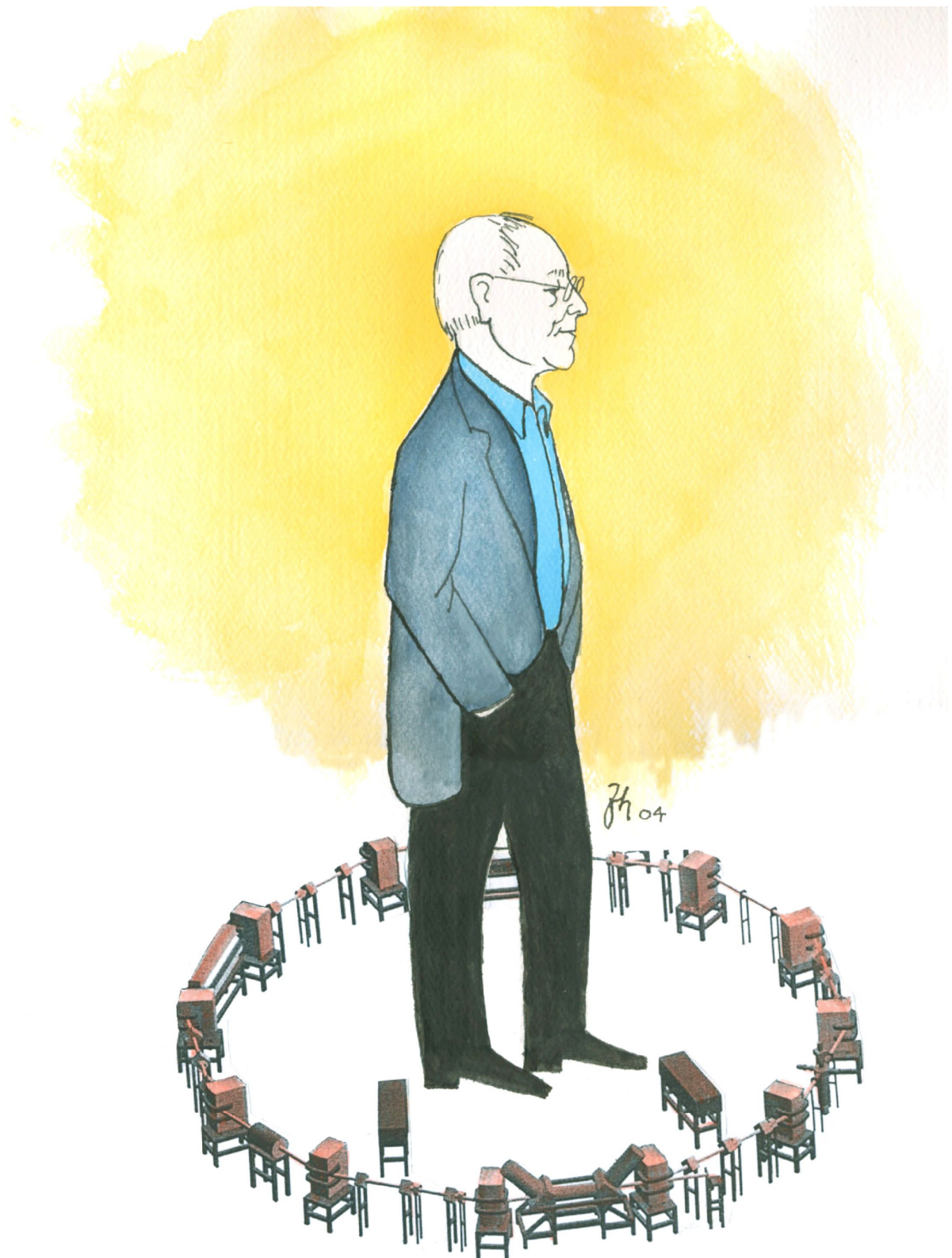
Gabriel Balint-Kurti (Bristol)



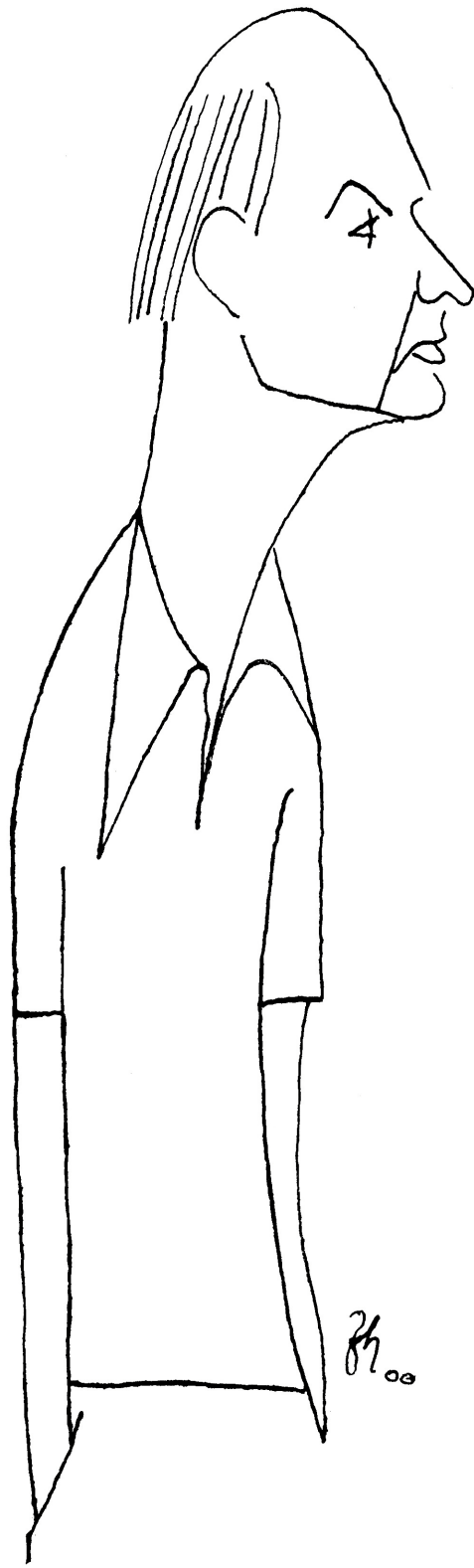
*The Arsenal of David Field (Aarhus)
(inspired by David's red pullovers)*



Mats Larsson (Stockholm)



*Mats Larsson (Stockholm),
the Recombination King of the CRYRING*



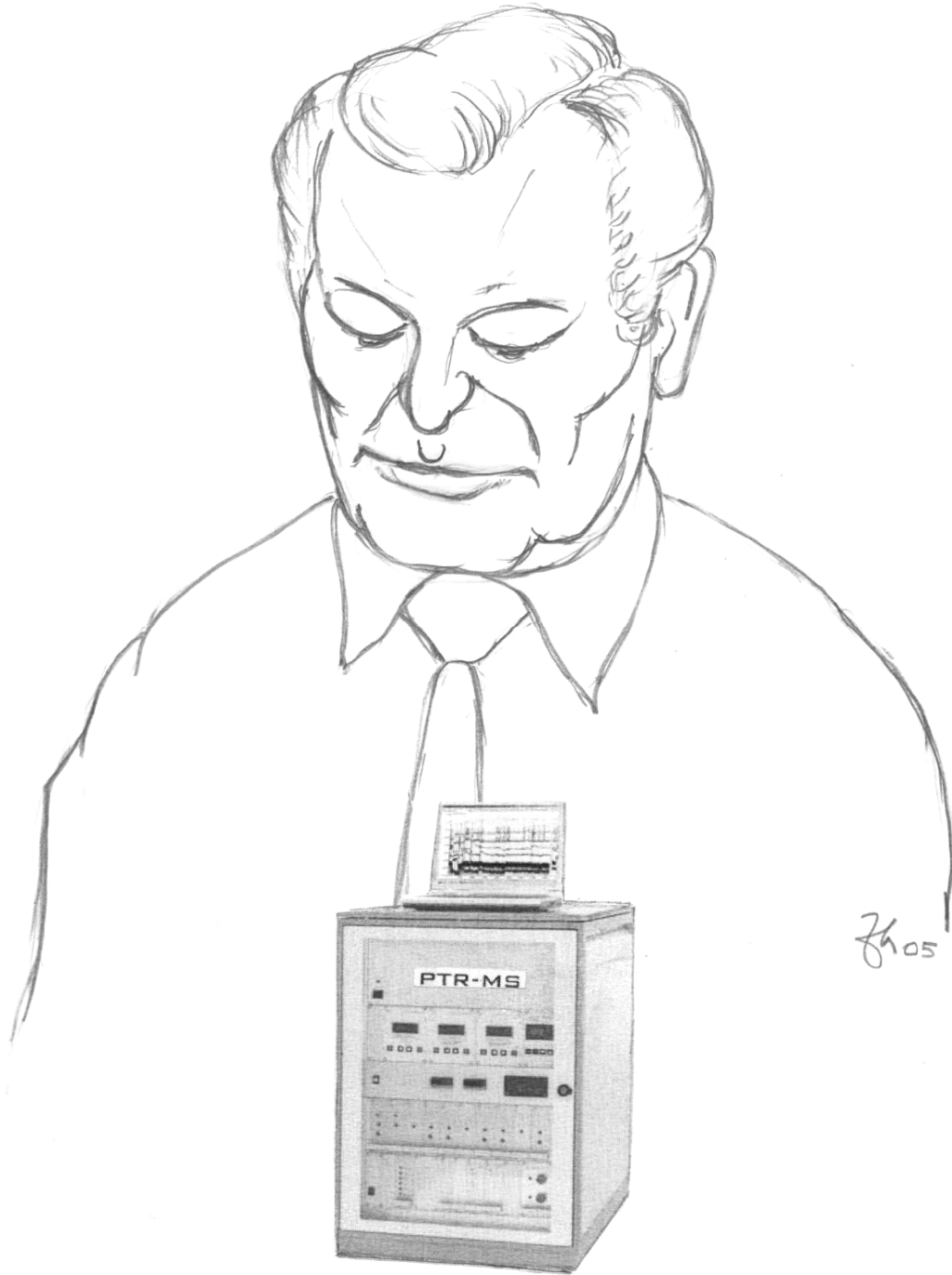
Steve Stolte, Amsterdam



Harold Linnartz (Amsterdam)



Hannspeter Winter, Vienna



Werner Lindinger, Innsbruck



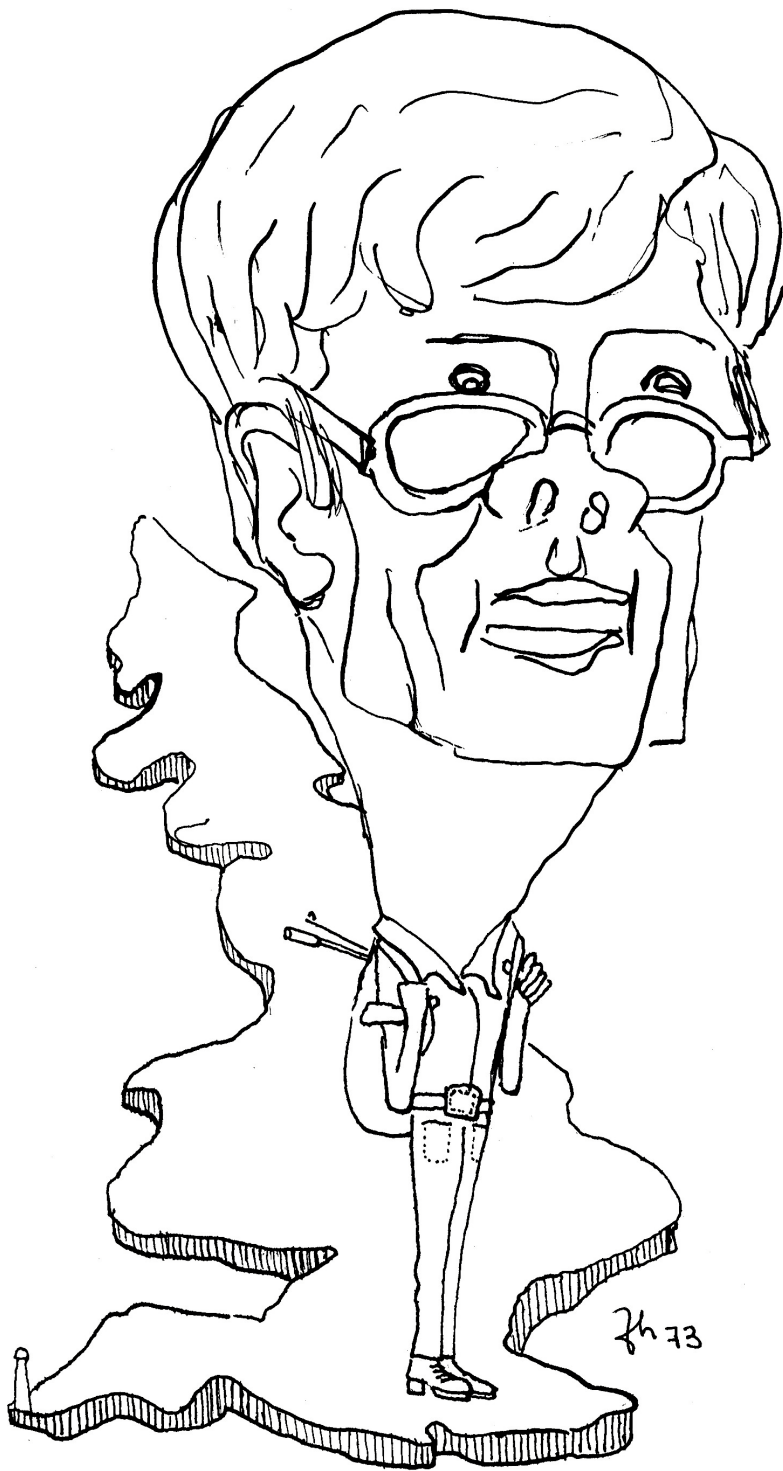
A.A. Volpi, Perugia



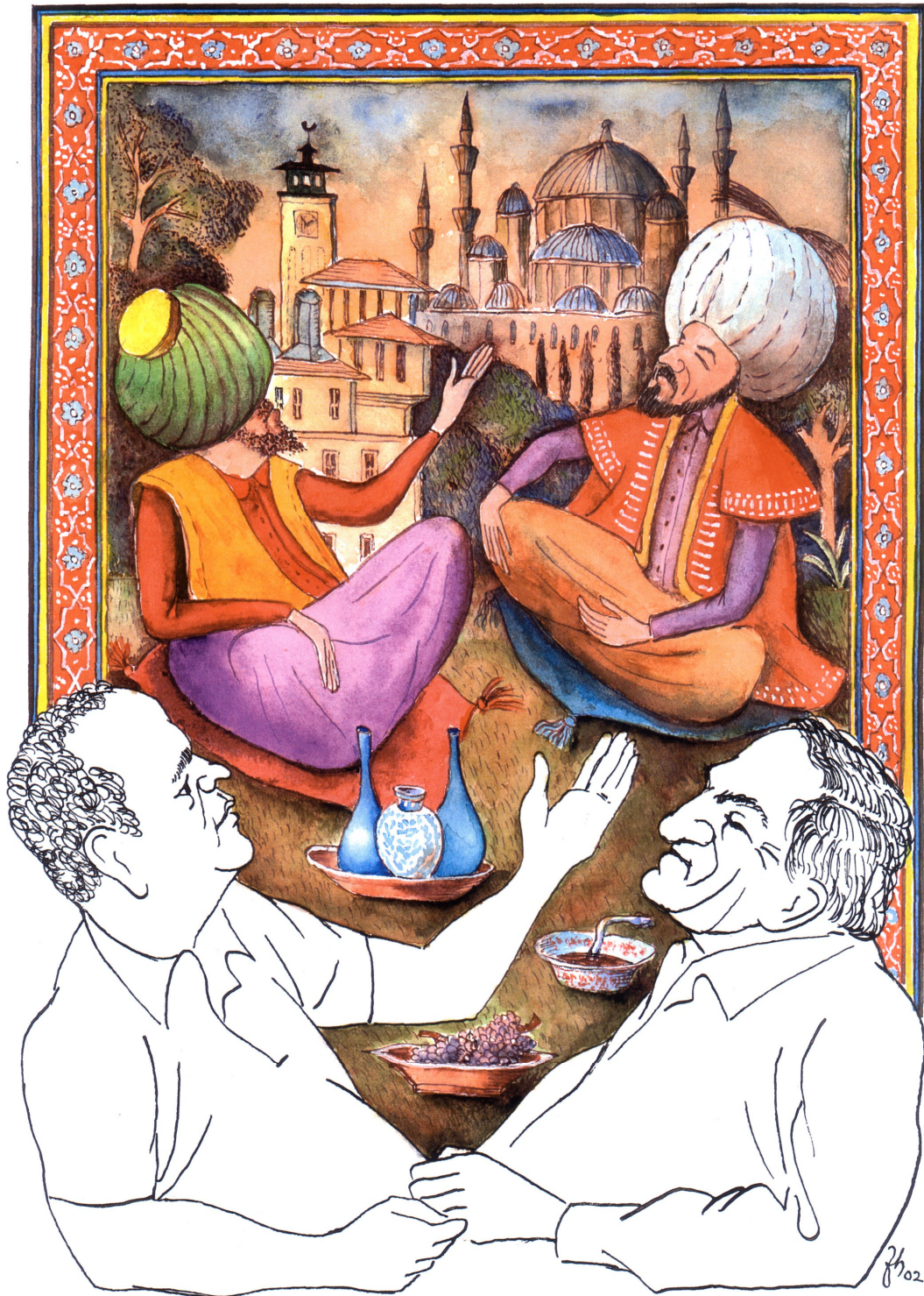
*Joshua the Thundervoice lecturing at the Gordon Conference 1980
(Joshua Jortner, Tel Aviv)*



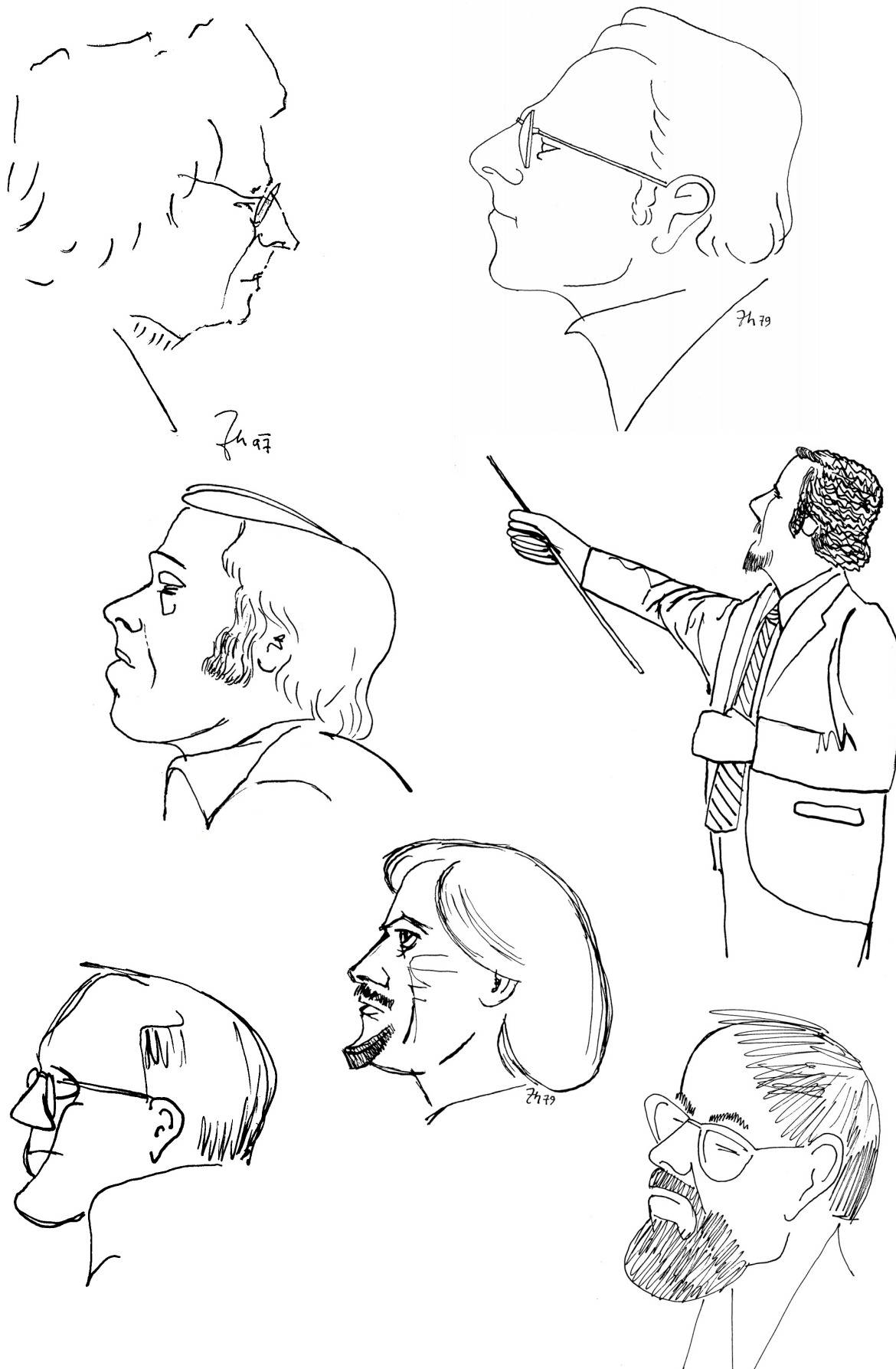
Michal Baer (Soreq), fully bearded



The Post-Doc traveller (Keith Birkinshaw, Aberystwyth)



Ersin Yurtsever and Attila Askar (Istanbul) – the organizers of the MOLEC 02



Quantum chemists:

*S. Peyerimhoff (Bonn), W. Kutzelnigg (Bochum), R. Ahlrichs (Karsruhe),
H. Lischka (Wien), C. Weiss (Leipzig), W. Jakubetz (Wien), L. Zülicke (Berlin)*

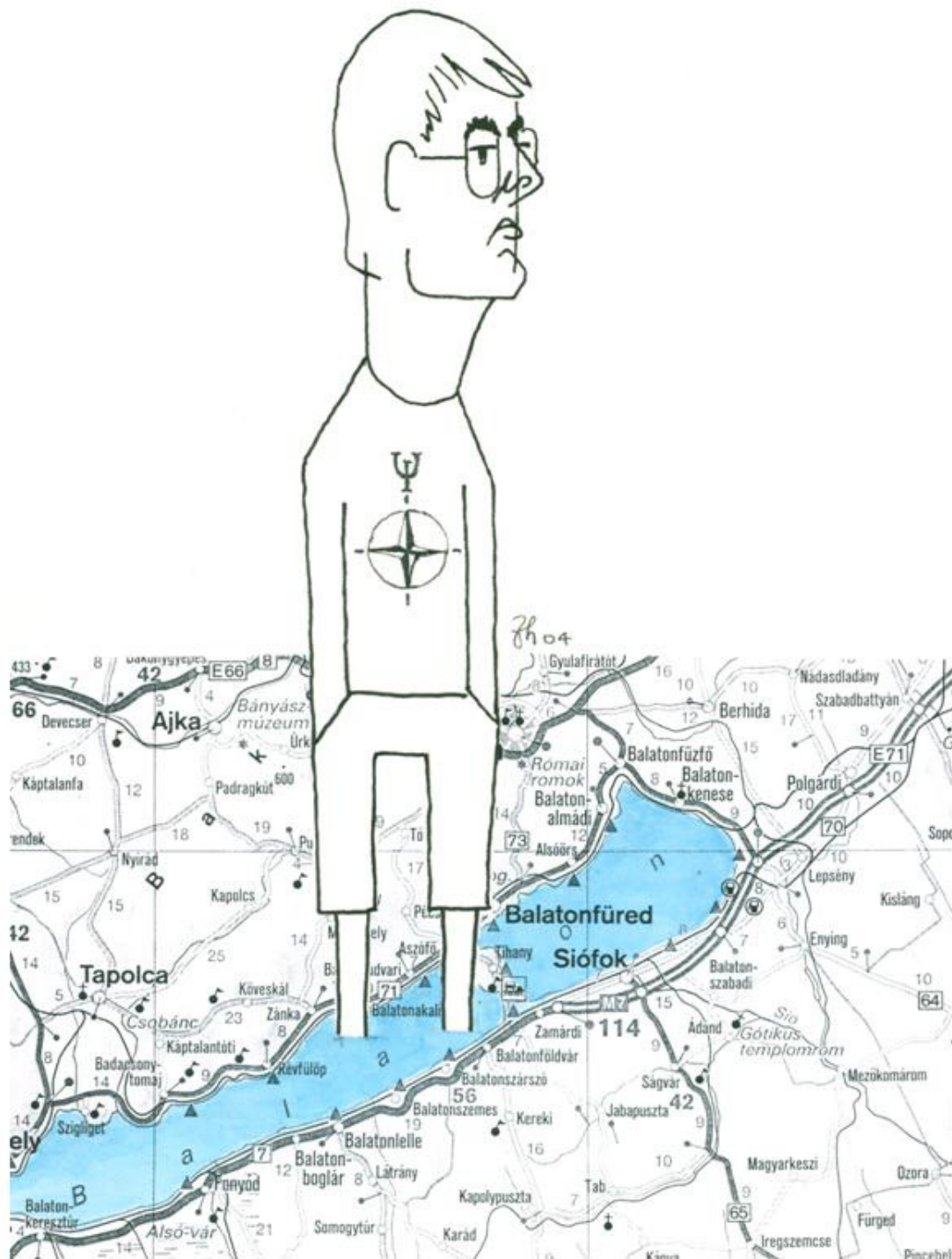


Lutz Zülicke lecturing



NATO Reaction Dynamics Meeting, Balatonföldvár, 2003:

György Lendvay (Budapest)

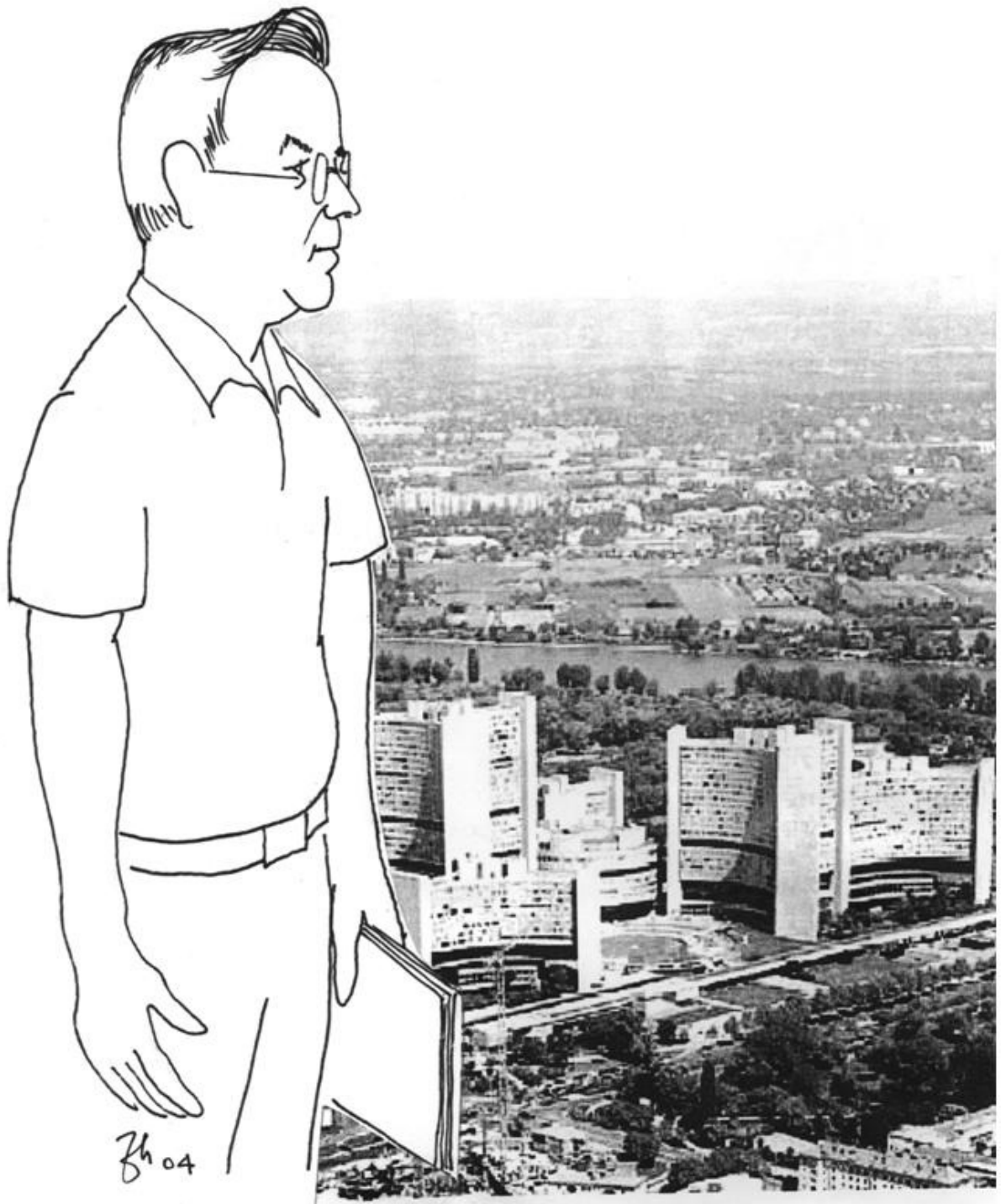


*NATO Reaction Dynamics Meeting, Balatonföldvár, 2003:
Millard Alexander (Maryland) deep in the Balaton Lake*



NATO Reaction Dynamics Meeting, Balatonföldvár, 2003:

Evgenii Nikitin (Haifa), Antonio Laganá (Perugia), Danko Bosanac (Zagreb), Gunnar Nyman (Göteborg), Enzo Aquilanti (Perugia), M. V. Basilevsky (Moscow), U. Manthe (München)



Bob (R.E.H.) Clark, I.A.E.A. Vienna

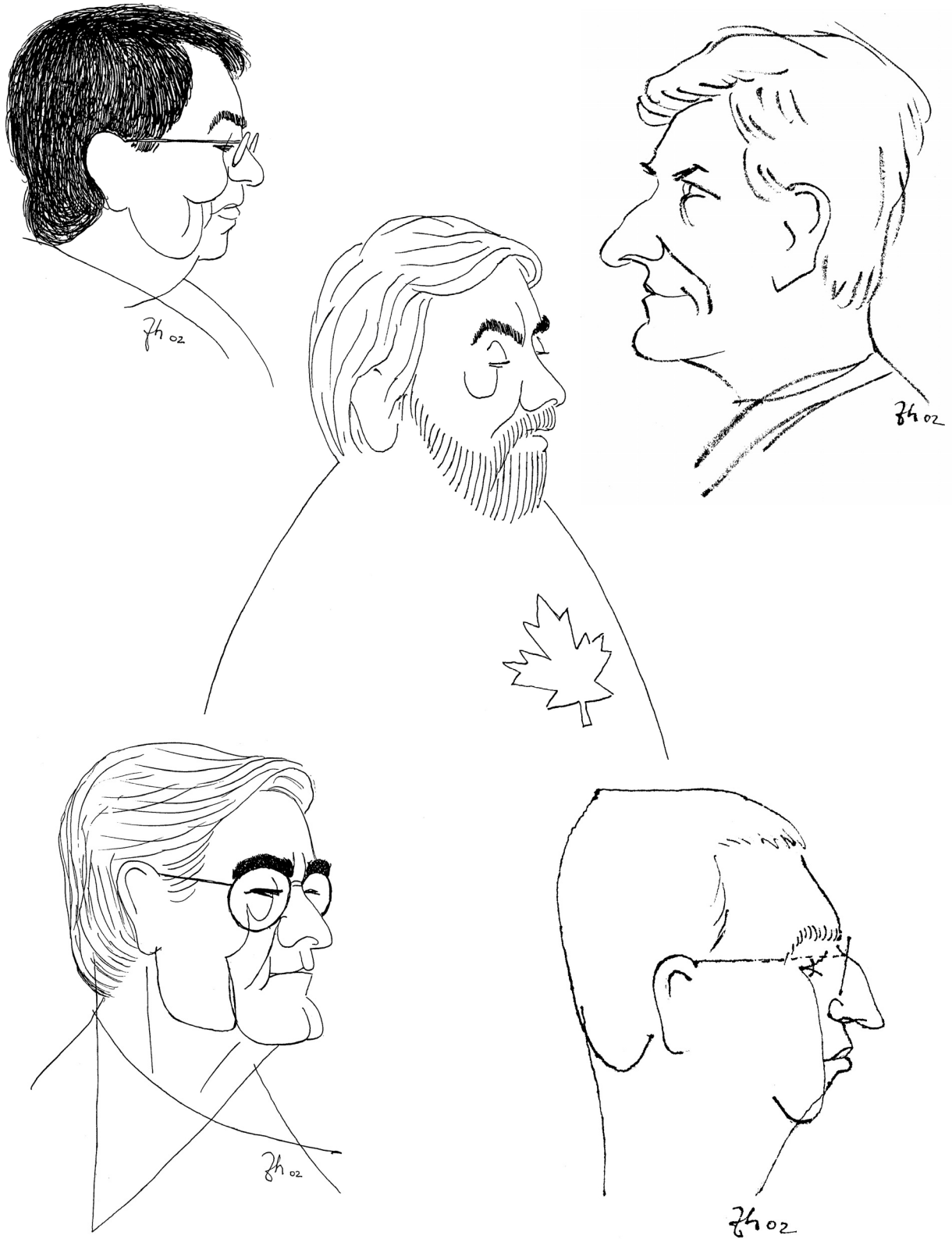


*I.A.E.A. Vienna 2004: Pierre Defrance ((Louvain-la-Neuve),
Štefan Matejčík (Bratislava), Ioan Schneider (Le Havre)*



The CARNET EU Network 1994-1999:

*K.-H. Hoffmann (Chemnitz), B. Andresen (Copenhagen), L. Diosi (Budapest),
R. Mrugala (Torun), Alex De Vos (Gent), P. Landsberg (Southampton), H. Farkas
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(Toronto), M.R. Flannery (Atlanta), M. Quack (Zürich)*



Jh 02

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Helden (Nieuwegein), P. Defrance (Louvain), S.D. Price (London)*

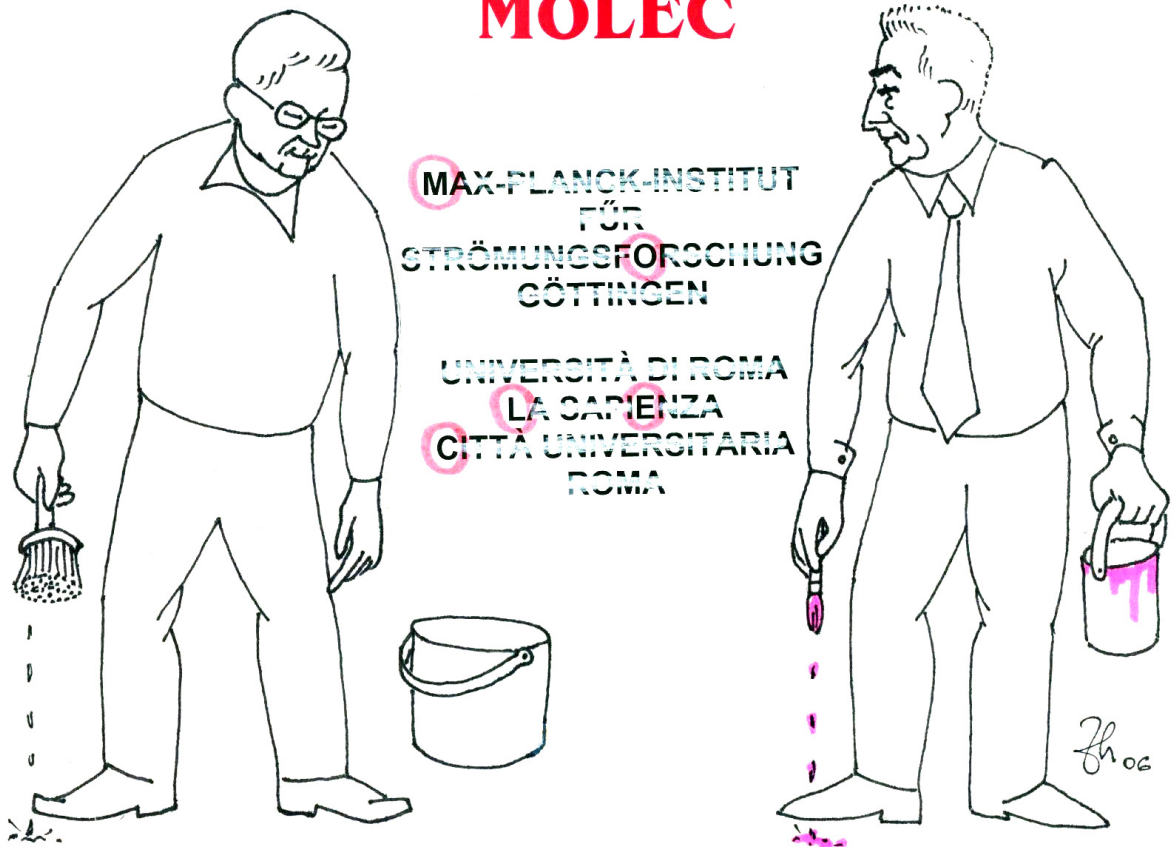


*Advisory Board of the Czech EURATOM Association:
M. Tendler, M. Endler, G. Van Oost, C. Hidalgo, J. Linke, M. Valovic,
HP.Winter, J. Stöckel, Y. Peysson*



*Italians at the Czechoslovak-Italian Symposium on Catalysis, Liblice Castle, 1981:
F. Piacenti, S. Carrà, F. Trifirò, A. Iannibello, N. Pernicone, F.eppe*

LAYING FOUNDATIONS OF MOLEC



Founders of MOLEC: J.P. Toennies and F. Gianturcio