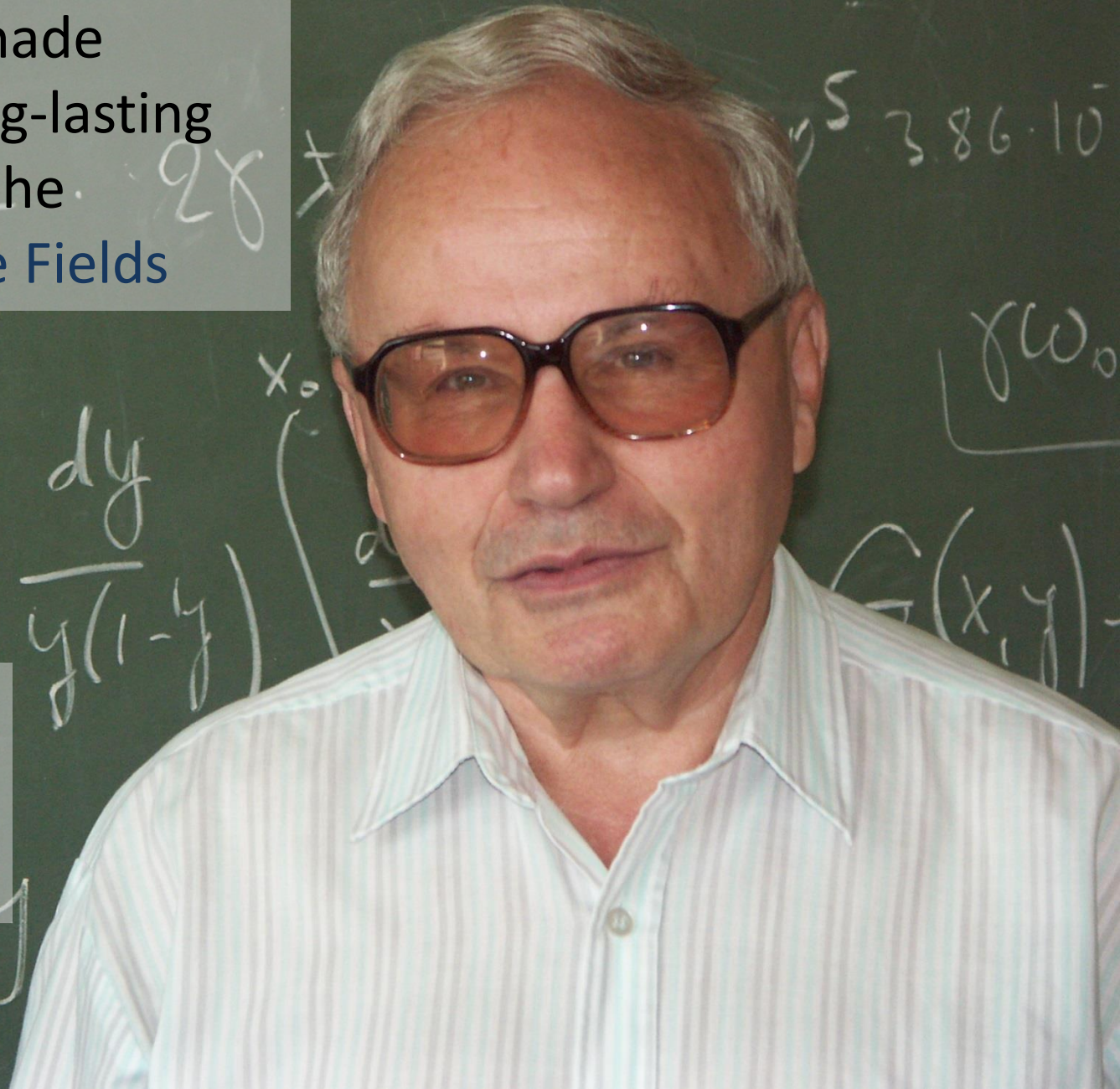
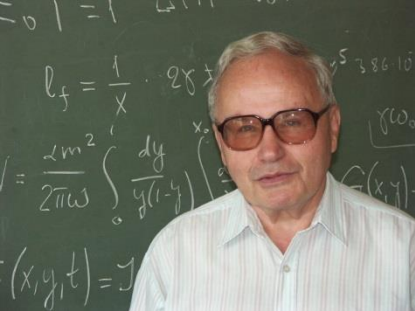


A tribute to the memory of
Prof. Baier who made
profound and long-lasting
contributions to the
Physics of Intense Fields



*Ulrik I. Uggerhøj
Department of Physics and
Astronomy
Aarhus University
Denmark*



Short CV

Baier Vladimir Nicolaevich
Chief Scientist
Budker Institute of Nuclear Physics,
Novosibirsk, 630090, RUSSIA

Born 1930, Kharkov, USSR

Graduated from Kiev University 1954

Postgraduated: Lebedev Institute, Moscow, 1955-1958

Institute of Nuclear Physics from 1959

PhD 1961

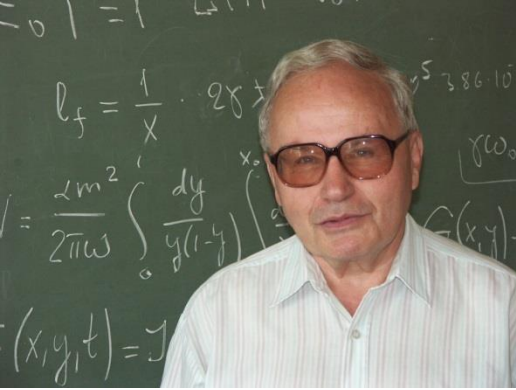
Doctor of Science 1965

The main scientific results are in

Interaction of Elementary Particles at High Energy

Theory of Electromagnetic Interaction.

Passed away 19.2.2010

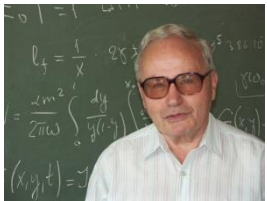


Selected publications, books etc.

The total number of **published articles is around 250.**

3 books:

1. V.N.Baier, V.M.Katkov and V.S.Fadin,
Radiation from Relativistic Electrons (in Russian),
2. V.N.Baier, V.M.Katkov and V.M.Strakhovenko,
Electromagnetic Processes at High Energies in Oriented Crystals (in Russian),
3. V.N.Baier, V.M.Katkov and V.M.Strakhovenko,
Electromagnetic Processes at High Energies in Oriented Crystals



Selected publications

Quasiclassical
operator
method

Radiative
polarization

Anomalous
magn. Moment
in strong fields

Quantum
synchrotron
rad. in crystals

Beamstrahlung

Pair production
in crystals

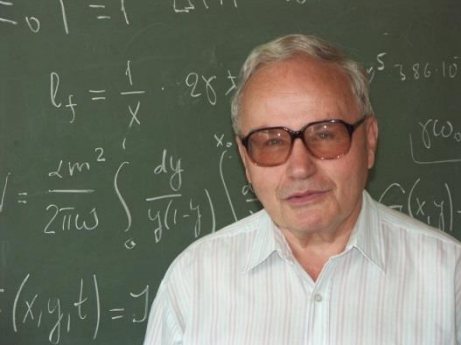
Photon splitting

LPM effect

- V.N. Baier and V.M. Katkov. **Processes involved in the motion of high energy particles in a magnetic field.** *Zh. Eksp. Teor. Fiz.*, **53**, 1478–1491, 1967. [Sov. Phys. JETP **26**, 854-860 (1968)].
- V.N. Baier, V.M. Katkov, and V.M. Strakhovenko. **Kinetics of radiative polarization.** *Zh. Eksp. Teor. Fiz.*, **58**, 1695–1702, 1970. [Sov. Phys. JETP **31**, 908-911].
- V.N. Baier, V.M. Katkov, and V.M. Strakhovenko. **Radiation of ultrarelativistic particles moving near crystalline axes.** *Phys. Lett. A*, **95**, 403–406., 1983.
- V.N. Baier, V.M. Katkov, and V.M. Strakhovenko. **Radiation from relativistic particles colliding in a medium in the presence of an external field.** *Zh. Eksp. Teor. Fiz.*, **94**, 125–139., 1988. [Sov. Phys. JETP **67**, 70-77 (1988)].
- V.N. Baier, V.M. Katkov, and V.M. Strakhovenko. **Theory and experiment for pair production in crystals.** *Nucl. Instrum. Methods B*, **34**, 521–522., 1988.
- V.N. Baier, A.I. Milstein, and R.Zh. Shaisultanov. **Photon splitting in a strong electromagnetic field and the possibility of its observation in single crystals.** *Phys. Lett. A*, **120**, 255–258., 1987.
- V. N. Baier and V. M. Katkov. **Theory of the Landau-Pomeranchuk-Migdal effect.** *Phys. Rev. D*, **57**(5), 3146–3162, 1998.



- Crystal effects at relativistic energy, Aarhus, Denmark, 1995
- RREPS, Lake Baikal, Russia, 1999
- Quantum Aspects of Beam Physics, Hiroshima, Japan, 2003
- Channeling 2006, Frascati, Italy
- Channeling 2008, Erice, Italy
- 'Aarhus lectures', Aarhus, Denmark 2009 (pdf available)



Prof. Baier – active all his life

- V.N. Baier ,V.M.Katkov, *Pair creation by a photon in an electric field*, Physics Letters A 374 (2010) 2201–2206 (Received 11 January 2010, manuscript finished while he was in Aarhus)

E-mail, 8.2.2010:

Dear Ulrik,

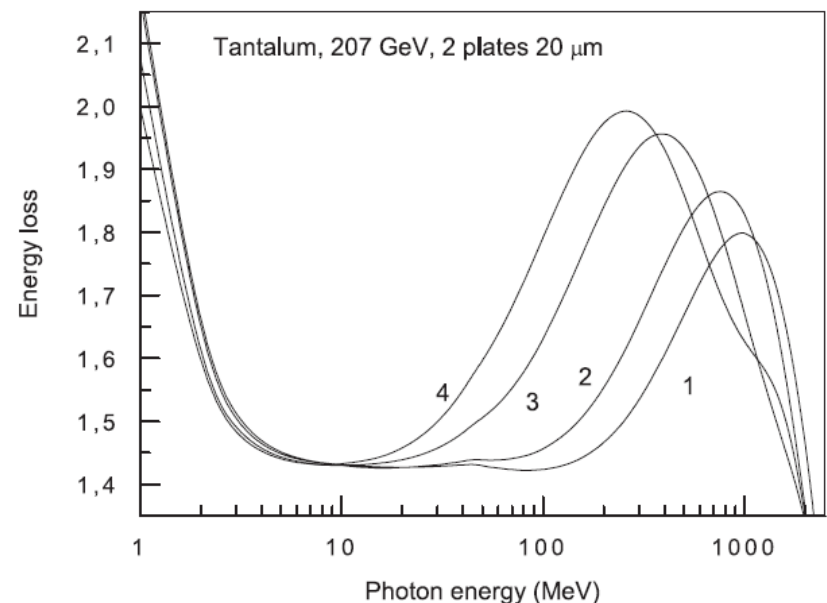
I am sending in attachment to this mail Fig. with energy loss spectrum for two Ta plates and some explanation to Fig.

Questions concerning these results are well-comed.

With best regards,

Vladimir N. Baier

PS. Here is very hard winter: 40 days the temperature is below -20 C, sometimes is -40 C.



Two personal reminiscences



Dear Ulrik!,

I am sending you, Malena and all big family my season greetings and best wishes for the New Year 2010.

With best regards,

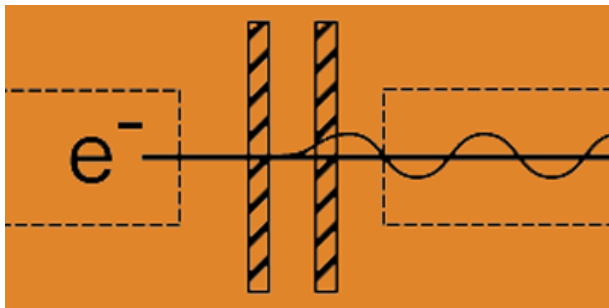
Vladimir N. Baier



Restaurant Skovmøllen

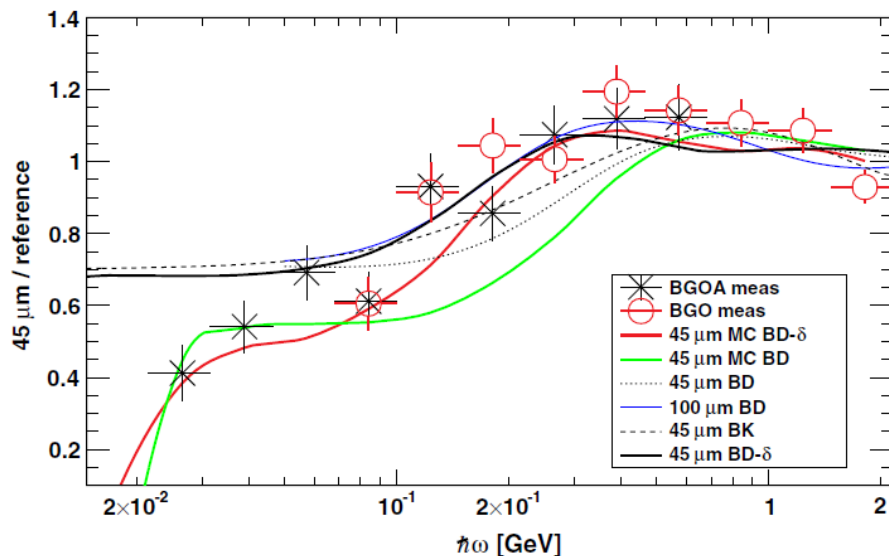
A couple of my interactions
with prof. Baier

Structured targets



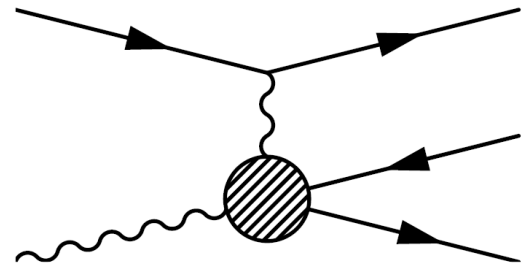
PRL **108**, 071802 (2012)

PHYSICAL REV

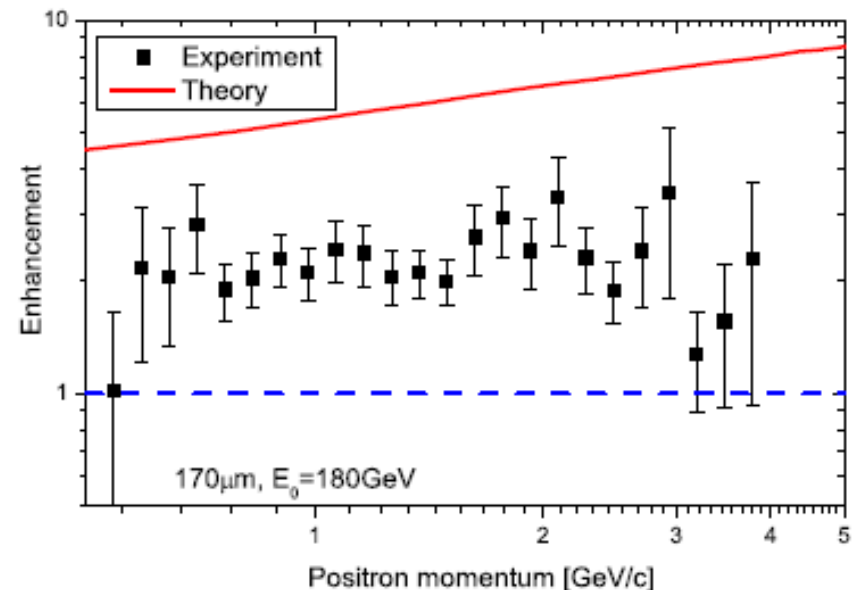


Strong field tridents

"If you do the experiment, we
will do the calculation"
[A. Belkacem's group abstained]



PHYSICAL REVIEW D **82**, 072002 (2010)



Physics of Intense Fields

Keen interest
Discussion
Experiment-Theory
interaction
Passion
Dedication
Scientific expertise

Aarhus lectures:

[http://users-physics.au.dk/ulrik/VNBaier Aarhus lectures.pdf](http://users-physics.au.dk/ulrik/VNBaier_Aarhus_lectures.pdf)

A 'translation' into 'experimentalist terms', see app. A of:

[http://users-physics.au.dk/ulrik/Doct dis UIU.pdf](http://users-physics.au.dk/ulrik/Doct_dis_UIU.pdf)