Memories of Lev Lipatov

2 May 1940 - 4 September 2017

Boris Kopeliovich

Lev Lipatov was one of the founders and developers of the contemporary Quantum Chromodynamics. For many years he was (and remained up to the very last moment) the world leader in perturbative QCD theory. The method of summation of the leading logarithms suggested and developed in the groundbreaking works by Vladimir Gribov and Lev Lipatov became the backbone of the modern theory of hard QCD processes. A self consistent QCD parton model that followed from the summation of the leading logarithms predicted logarithmic evolution of the structure functions with the transferred momentum. The respective evolution equations are now known as the DGLAP equations (after Dokshitzer, Gribov, Lipatov, Altarelli, and Parisi).

Lev Lipatov was deeply involved in the research on the high energy scattering in QCD. He and his collaborators obtained the famous BFKL (Balitsky, Fadin, Kuraev, Lipatov) equation. This equation allows to find the structure of the scattering amplitude singularities in the complex angular momentum plane, and therefore, determines the high energy asymptotic behavior of the scattering amplitudes. The BFKL theory is nowadays the basic tool for description of scattering at high energies. It is not an exaggeration to say that all our understanding of high energy scattering is based on the works of Lev Lipatov and his school.

Lev N. Lipatov (1940 – 2017)

- **born: May 2, 1940 Leningrad**

- **graduated: 1962 Lenigrad State University**

- **PhD student of V. Gribov: 1964 – 1967**
  A. Ioffe Physical Technical Institute (FTI AS USSR)
  Leningrad Nuclear Physics Institute (separated from FTI in 1971 now Petersburg Nuclear Physics Institute)

Also professor at St. Petersburg State University since 1992

Awards, Honors, Prizes:

Correspondent-Fellow of Russian Academy of Sciences, RAS (1997)
Fellow (Academician) of RAS (2011)
Alexander Von Humbold Award (1995)
Pomeranchuk Prize(2001)
Marie Curie Award (2006)
Ad Astra (2009)
European Physics Society (2015)

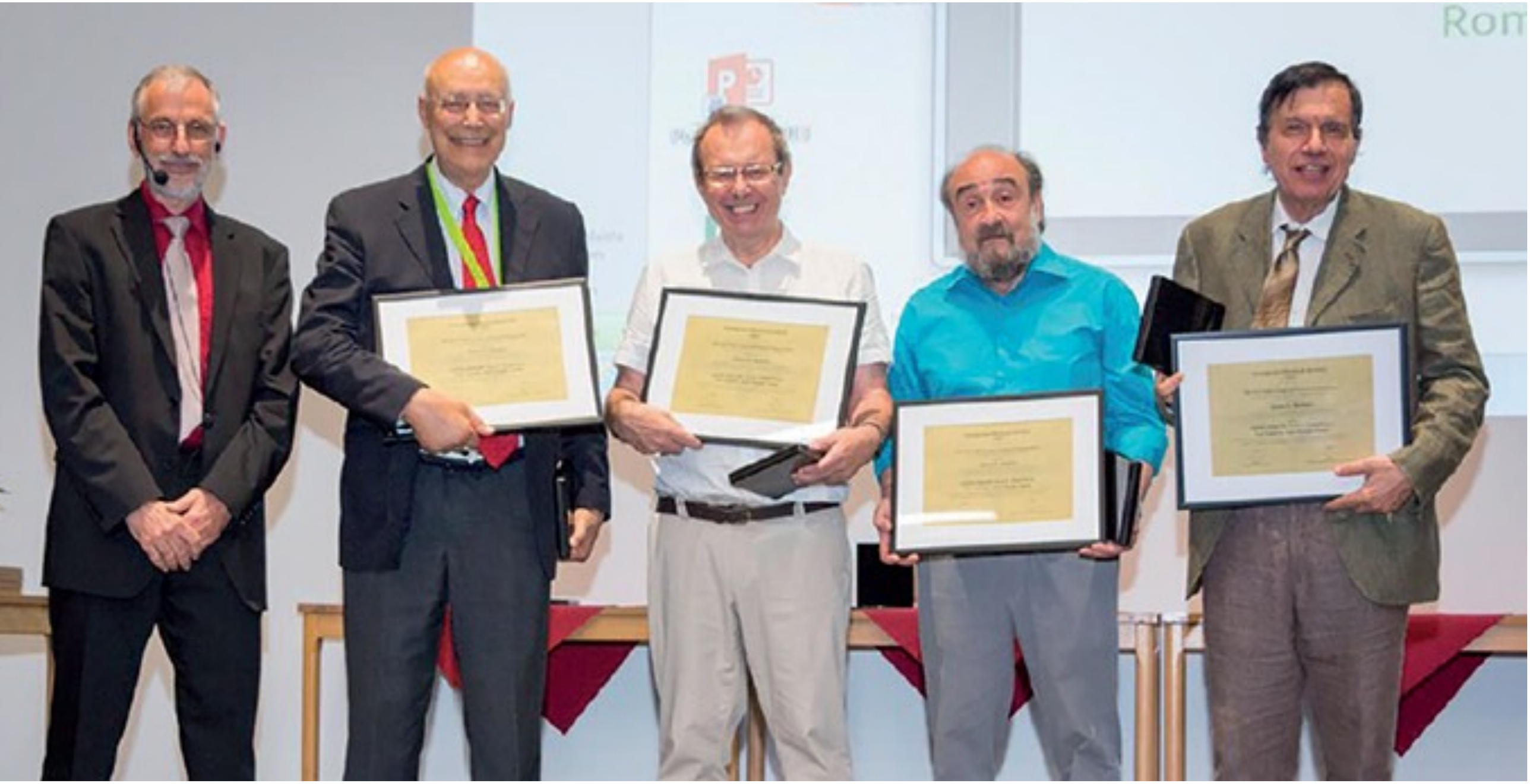
European Physical Society
PRIZE

The 2015 High Energy and Particle Physics Prize
for an outstanding contribution to High Energy Physics
is awarded to

James D. Bjorken
"for his prediction of scaling behaviour in the structure of the proton
that led to a new understanding of the strong interaction"

and to

Guido Altarelli, Yuri L. Dokshitzer,
Lev [illegible]atov, [illegible] Giorgio Parisi




Certificate

Lev N. Lipatov (1940 – 2017): selected topics - I

- **High-energy Gribov-Regge asymptotics in QED**
  V.Gribov, V.Gorshkov, L.Lipatov, G.Frolov (1969-70)

- **High-energy Bjorken asymptotics in QCD: DGLAP**
  V.Gribov, L.Lipatov (1971-72) L.Lipatov (1974)
  G.Altarelli, G.Parisi (1977) Yu.Dokshitzer (1977)

- **High-energy energy Gribov-Regge asymptotics in QCD: LL BFKL**
  V.Fadin, E.Kuraev, L.Lipatov (1975-77)
  I.Balitsky, L.Lipatov (1978) L.Lipatov (1986)

- **High-energy energy Gribov-Regge asymptotics in QCD: NLL BFKL**
  V.Fadin, L.Lipatov (1989-98)
  S.Brodsky, V.Fadin, V.Kim, L.Lipatov, G.Pivovarov (1999)

- **High-energy energy Gribov-Regge asymptotics in ElectroWeak theory**
  J.Bartels, L.Lipatov (2007)

- **High-energy energy Gribov-Regge asymptotics in Quantum Gravity**
  L.Lipatov (1989,2013) J.Bartels, L.Lipatov (2014)

Lev N. Lipatov (1940 – 2017): selected topics - II

- **High-order term estimate in QFT (1976)**
  L.Lipatov (1976)

- **High-energy QCD N_C >>1 as integrable theory**
  L.Lipatov (1994) L.Faddeev, G.Korchemsky (1995)

- **Effective actions for Gribov-Regge asymptotics:**
  QCD and Quantum Gravity
  R. Kirschner, L.Lipatov, L. Szymanowski (1994)
  L.Lipatov (1995-2013)

- **BFKL in SUSY N=4 and AdS/CFT**
  A.Kotikov, L.Lipatov, A.Onischenko, V.Velizhanin (2000-2007)

7 th International Conference on High Energy Physics in the LHC era

8-12 January 2018, Universidad Técnica Federico Santa María, Valparaíso, Chile

Dedicated to the memory of
Lev Lipatov

Topics

Higgs Physics
Heavy Ion Collisions
Dark Matter Searches.
Astroparticle Physics
Hadron Spectroscopy
Neutrino Physics
High Energy QCD
Non Perturbative QCD
Future Experiments
Particle Detectors and Instrumentation
Beyond the Standard Model Physics
Ads/CFT Phenomenology

CCT Val

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