

Curriculum Vitae

Dr. Roman Pasechnik

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1. HIGHER EDUCATION DEGREES

- 30/06/2006 *Master of Science* degree in Theoretical and Mathematical Physics, at Moscow State University, Moscow, Russia (supervised by Prof. O. Teryaev)
Thesis: Dispersive approach to the axial anomaly and nonrenormalization theorem
- 30/06/2006 *Master of Science* degree in Physics at Southern Federal University, Rostov-on-Don, Russia (supervised by Prof. G. Vereshkov)
Thesis: Split Higgsino in Split Supersymmetry
- 30/06/2004 *Bachelor of Science* degree in Physics at Southern Federal University, Rostov-on-Don, Russia (supervised by Prof. G. Vereshkov)
Thesis: Neutral and charged Higgsino as carriers of residual SUSY effects

2. DOCTORAL DEGREE

- 11/12/2009 *Candidate of Science* degree in Physical and Mathematical sciences (equivalent to PhD degree) at Joint Institute for Nuclear Research, Dubna, Russia (supervised by Prof. O. Teryaev)
Thesis: Inclusive and diffractive processes in Quantum Chromodynamics: nonperturbative elements of factorization and power corrections

3. POSTDOCTORAL POSITIONS

- 09/2009–08/2011 *Postdoctoral Fellow* at Uppsala University (Uppsala, Sweden)
funded by the Carl Trygger Foundation

4. DOCENT LEVEL

Expected completion of the Docent degree in the spring 2014 as part of my current tenure track activity at Lund University.

5. PRESENT POSITION

- 09/2011–08/2015 *Associate senior lecturer* ("biträdande lektor") at Lund University (tenure track position equivalent to "Assistant Professor" with 75% research time).

6. PREVIOUS POSITIONS

- 08/2008–12/2008 *Academic Associate* at Arizona State University (Tempe, USA)
10/2007–06/2008 French government *Research Fellow* at Laboratoire de Physique Théorique (LPT) d'Orsay, Université Paris Sud 11 (Orsay, France)
09/2004–09/2009 *Junior Scientist* at Joint Institute for Nuclear Research (Dubna, Russia)

7. SUPERVISION

- 05/2012–now Doctoral student, George Prokhorov (Southern Federal U.)
Topic: Quantum dynamics of topological and wave fluctuations in the Yang-Mills vacuum

- 09/2012–09/2013 Doctoral student, Denis Karateev (now at ICTP Trieste)
 Topic: Composite Higgs models and new high-scale strongly-coupled dynamics
- 12/2012–06/2013 Postdoctoral research associate, Sabir Ramazanov (now at Brussels U.)
 Topic: Composite Dark Matter in Chiral-Symmetric Technicolor
- 09/2013–present Postdoctoral research associate, Eduardo Basso
 Topic: Soft color neutralization in diffractive scattering
- 09/2011–06/2012 Master student, Roland Katz (now PhD student at Nantes U.)
 Thesis: Polarised J/Ψ production in TMD factorisation at the LHC

8. OTHER RELEVANT INFORMATION

Academic experience

- Currently I teach advanced undergraduate level course "Classical Mechanics" and Master/PhD level course "Cosmology and Astroparticle Physics" at Lund University
- Invited lecturer at the International Summer School "Diffractive and electromagnetic processes at high energies" in Heidelberg in September 2011
- Invited series of lectures on "Theory of High Energy scattering" at University of Sao Paulo, Brazil, May 2012.

Refereeing for journals

- Referee for Phys. Rev. D; Phys. Rev. Lett.; Found. of Phys.; Int. J. Mod. Phys.

Grants, Awards and Fellowships

- Swedish Institute Scholarship for a visiting PhD student (2014).
- Crafoord Foundation Research Grant for a short-term junior postdoc (2012).
- Alexander von Humboldt Foundation Fellowship (2011).
 Two-year postdoctoral fellowship at DESY Theory Group (cancelled in favour of my current tenure track position at Lund U.)
- Carl Trygger Foundation Fellowship at Uppsala University (2009–2011).
- Estonian Science Foundation Fellowship (2009).
 Three-year postdoctoral fellowship (cancelled in favour of my postdoc at Uppsala U.)
- French government Research Fellowship (2007) at LPT, Orsay, France
- Grant of Russian Fund of Basic Research, JINR (2007)
- Dynasty Foundation Research Fellowship (2006), Moscow State University
 Three-year distinguished PhD fellowship for ourstanding research work
- Fellowship of the President of Russian Federation (2003), Southern Federal University
 One year fellowship given to excellent young researchers

Invited conference talks and seminars

- Over 40 invited international conference talks during the period 2007–2013
- Invited plenary talk on "Drell Yan Physics at the LHC" at International Workshop "Drell-Yan Scattering and the Structure of Hadrons", 21–25 May 2012, Trento, Italy
- 15 invited seminars at research institutions in Europe, US and Latin America 2006–2013
- Visiting Fellow at GGI Programme "QCD after the start of LHC" 2011, Florence, Italy

PUBLICATION LIST

The up-to-date information on publications and citations can be accessed here:
http://inspirehep.net/search?ln=en&p=a+pasechnik%2Cr&of=hb&action_search=Search

I. Articles in international scientific journals

1. Search for technipions in exclusive production of diphotons with large invariant masses at the LHC
P. Lebiedowicz, R. Pasechnik and A. Szczurek
Nuclear Physics B (submitted), arXiv:1309.7300
2. Vector-like technineutron Dark Matter: is a QCD-type Technicolor ruled out by XENON100?
R. Pasechnik, V. Beylin, V. Kuksa and G. Vereshkov
European Physical Journal (submitted), arXiv:1308.6625
3. Dynamics of wave fluctuations in the homogeneous Yang-Mills condensate
G. Prokhorov, R. Pasechnik and G. Vereshkov
Journal of High Energy Physics (submitted), arXiv:1307.5695
4. Quantum Gravity effects on neutrino oscillations in a strong gravitational field
Jonathan Miller and Roman Pasechnik
Physical Review D (submitted), arXiv:1305.4430
5. Chiral-Symmetric Technicolor with Standard Model Higgs boson
R. Pasechnik, V. Beylin, V. Kuksa and G. Vereshkov
Physical Review D88 (2013) 075009, arXiv:1304.2081
6. On a possible compensation of the QCD vacuum contribution to the Dark Energy
R. Pasechnik, V. Beylin and G. Vereshkov
Physical Review D88 (2013) 023509, arXiv:1302.5934
7. Dark Energy from graviton-mediated interactions in the QCD vacuum
R. Pasechnik, V. Beylin and G. Vereshkov
Journal of Cosmology and Astroparticle Physics 1306 (2013) 011, arXiv:1302.6456
8. Diffractive W production at hadron colliders as a test of colour singlet exchange mechanisms
G. Ingelman, R. Pasechnik, J. Rathsman and D. Werder
Physical Review D87 (2013) 094017, arXiv:1210.5976
9. Diffractive Gauge Bosons Production beyond QCD Factorisation
R. Pasechnik, B. Kopeliovich and I. Potashnikova
Physical Review D86 (2012) 114039, arXiv:1204.6477
10. QCD diffractive mechanism of exclusive W^+W^- pair production at high energies
P. Lebiedowicz, R. Pasechnik and A. Szczurek
Nuclear Physics B867 (2013) 61, arXiv:1203.1832

11. Enhancement of associated H^+W^- production in the NMSSM
R. Enberg, R. Pasechnik and O. Stål
Physical Review D85 (2012) 075016, arXiv:1112.4699
12. Gauge Invariance of DVCS off an Arbitrary Spin Hadron: The Deuteron Target Case
I. Anikin, R. Pasechnik, B. Pire and O. Teryaev
European Physical Journal C72 (2012) 2055, arXiv:1112.1849
13. Mass Shell Smearing Effects in Top Pair Production
V. Kuksa, R. Pasechnik and D. Vlasenko
International Journal of Modern Physics A27 (2012) 1250072, arXiv:1112.2387
14. Drell-Yan diffraction: Breakdown of QCD factorization
R. Pasechnik and B. Kopeliovich
European Physical Journal C71 (2011) 1827, arXiv:1109.6695
15. New contributions to central exclusive production of dijets
in proton-(anti)proton collisions
R. Maciula, R. Pasechnik and A. Szczurek
Physical Review D84 (2011) 114014, arXiv:1109.5517
16. Four loop QCD analysis of the Bjorken sum rule vs data
R. Pasechnik, D. Shirkov, O. Teryaev, O. Solovtsova and V. Khandramai
Physics Letters B706 (2012) 340, arXiv:1106.6352
17. Associated central exclusive production of charged Higgs bosons
R. Enberg and R. Pasechnik
Physical Review D83 (2011) 095020, arXiv:1104.0889
18. Measurement of exclusive production of scalar $\chi_c(0^+)$ meson in proton-(anti)proton
collisions via $\chi_c(0^+) \rightarrow \pi^+ \pi^-$ decay
P. Lebedowicz, R. Pasechnik and A. Szczurek
Physics Letters B701 (2011) 434, arXiv:1103.5642
19. Central exclusive quark-antiquark dijet and Standard Model Higgs boson production
in proton-(anti)proton collisions
R. Maciula, R. Pasechnik and A. Szczurek
Physical Review D83 (2011) 114034, arXiv:1011.5842
20. Finite width effects in the near-threshold ZZZ and ZWW production at ILC
R. Pasechnik and V. Kuksa,
Modern Physics Letters A26 (2011) 1075, arXiv:1011.4202
21. Polarisation effects in the central exclusive χ_c production and the J/ψ
angular distributions
R. Pasechnik, A. Szczurek and O. Teryaev
Physical Review D83 (2011) 074017, arXiv:1008.4325

22. Exclusive $b\bar{b}$ pair production and irreducible background to the exclusive Higgs boson production
R. Maciula, R. Pasechnik and A. Szczurek
Physical Review D82 (2010) 114011, arXiv:1006.3007
23. Diffractive deep inelastic scattering from multiple soft gluon exchange in QCD
R. Pasechnik, R. Enberg and G. Ingelman
Physics Letters B695 (2011) 189, arXiv:1004.2912
24. Nucleon spin structure at low momentum transfers
R. Pasechnik, J. Soffer and O. Teryaev
Physical Review D82 (2010) 076007, arXiv:1009.3355
25. QCD rescattering mechanism for diffractive deep inelastic scattering
R. Pasechnik, R. Enberg and G. Ingelman
Physical Review D82 (2010) 054036, arXiv:1005.3399
26. Exclusive double-diffractive production of open charm in proton-proton and proton-antiproton collisions
R. Maciula, R. Pasechnik and A. Szczurek
Physics Letters B685 (2010) 165, arXiv:0912.4345
27. Nonperturbative and spin effects in the central exclusive production of tensor $\chi_c(2^+)$ meson
R. Pasechnik, A. Szczurek and O. Teryaev
Physical Review D81 (2010) 034024, arXiv: 0912.4251
28. Nucleon spin structure and pQCD frontier on the move
R. Pasechnik, D. Shirkov, O. Teryaev, O. Solovtsova, V. Khandramai
Physical Review D81 (2010) 016010, arXiv:0911.3297
29. Near-threshold boson pair production in the model of smeared-mass unstable particles
V. Kuksa and R. Pasechnik
Physics of Atomic Nuclei, vol.73, No.9 (2010) 1622, arXiv:0910.4644
30. Neutralino-nucleon interaction in the Split Higgsino scenario of the Dark Matter
R. Pasechnik, V. Beylin, V. Kuksa and G. Vereshkov
International Journal of Modern Physics A24 (2009) 6051, arXiv:0903.4201
31. Elastic double diffractive production of axial-vector $\chi_c(1^{++})$ mesons and the Landau-Yang theorem
R. Pasechnik, A. Szczurek and O. Teryaev
Physics Letters B680 (2009) 62, arXiv:0901.4187
32. Near-threshold W-pair production in the model of unstable particles with smeared mass
V. Kuksa and R. Pasechnik
International Journal of Modern Physics A24 (2009) 5765, arXiv:0902.2857

33. Bjorken Sum Rule and pQCD frontier on the move
R. Pasechnik, D. Shirkov and O. Teryaev
Physical Review D78 (2008) 071902, arXiv:0808.0066
34. Fine structure of anomalous dimensions in N=4 super Yang-Mills theory
A. Belitsky, G. Korchemsky and R. Pasechnik
Nuclear Physics B809 (2009) 244, arXiv:0806.3657
35. Near-threshold Z-pair production in the semi-phenomenological model of unstable particles
V. Kuksa and R. Pasechnik
International Journal of Modern Physics A23 (2008) 4125, arXiv:0802.4261
36. Central exclusive production of scalar χ_c meson at the Tevatron, RHIC and CERN LHC energies
R. Pasechnik, A. Szczurek and O. Teryaev
Physical Review D78 (2008) 014007, arXiv:0709.0857
37. Diagonalization of the neutralino mass matrix and boson-neutralino interaction
R. Pasechnik, V. Beylin, V. Kuksa and G. Vereshkov
European Physical Journal C56 (2008) 395, hep-ph/0702148
38. $pp \rightarrow pp\eta'$ reaction at high energies
R. Pasechnik, A. Szczurek and O. Teryaev
Physical Review D75 (2007) 054021, hep-ph/0608302
39. Scalar Higgs boson production in a fusion of two off-shell gluons
R. Pasechnik, A. Szczurek and O. Teryaev
European Physical Journal C47 (2006) 429, hep-ph/0603258
40. Dispersive approach to the axial anomaly and nonrenormalization theorem
R. Pasechnik and O. Teryaev
Physical Review D73 (2006) 034017, hep-ph/0510290

II. Peer-reviewed contributions to conferences

1. QCD factorization breaking in diffractive gauge bosons production at the LHC
R. Pasechnik, B. Kopeliovich and I. Potashnikova
Proceedings of Science QNP2012 (2012) 046
2. Diffractive pQCD mechanism of exclusive production of W^+W^- pairs in proton-proton collisions
P. Lebiedowicz, R. Pasechnik and A. Szczurek
Proceedings of Science QNP2012 (2012) 143, arXiv:1206.2754
3. Top pair production and decay at the LC
V. Kuksa, R. Pasechnik and D. Vlasenko
Proceedings of Science QFTHEP2011 (2011) 033

4. Exclusive production of $\chi_c(0^+)$ meson and its measurement in the $\pi^+ \pi^-$ channel
P. Lebiedowicz, R. Pasechnik and A. Szczurek
Nuclear Physics Proceedings Supplements 219-220 (2011) 284, arXiv:1108.2522
5. Soft color screening effects in diffractive DIS
R. Pasechnik, R. Enberg and G. Ingelman
AIP Conference Proceedings 1350 (2011) 85
6. Central exclusive production of polarized charmonia
R. Pasechnik, A. Szczurek and O. Teryaev
Nuclear Physics Proceedings Supplements 214 (2011) 110
7. Spin effects in diffractive charmonia production
R. Pasechnik, A. Szczurek and O. Teryaev
Proceedings of MESON 2010 Workshop, Krakow, Poland
International Journal of Modern Physics A26 (2011), 583
8. Hard diffraction and parton rescattering
R. Enberg, G. Ingelman and R. Pasechnik
Proceedings of 40th International Symposium on Multiparticle Dynamics
(ISMD 2010) Antwerp, Belgium, September 21-25, 2010
9. Hard diffractive scattering from soft color screening effects
R. Pasechnik, R. Enberg and G. Ingelman
Proceedings of Science ICHEP2010 (2010) 572
10. DVCS off deuteron and twist three contributions
I. Anikin, R. Pasechnik, B. Pire and O. Teryaev
Proceedings of Science ICHEP2010 (2010) 137, arXiv:1011.2853
11. Soft gluon rescattering in diffractive DIS
R. Pasechnik, R. Enberg and G. Ingelman
Proceedings of Science DIS2010 (2010) 085
12. Diffractive exclusive production of heavy quark pairs at high energy
proton-proton collisions
R. Maciula, R. Pasechnik and A. Szczurek
Proceedings of Science DIS2010 (2010) 094, arXiv:1007.1384
13. Factorization effect and near-threshold boson production at linear colliders
V. Kuksa, R. Pasechnik and G. Volchansky
Proceedings of Science QFTHEP 2010 (2010) 038
14. Central exclusive χ_c production
R. Pasechnik, A. Szczurek and O. Teryaev
In Proceedings of the 13th International Conference on Elastic and Diffractive Scattering
(Blois Workshop) "Moving Forward into the LHC Era", June 29 – July 3, 2009
CERN – Geneva, arXiv:1002.3527

15. Diffractive production of $\chi_c(0^+, 1^+, 2^+)$ mesons at LHC, Tevatron and RHIC
R. Pasechnik, A. Szczurek and O. Teryaev
Proceedings of Science EPS-HEP2009 (2009) 335, arXiv:0909.4498

16. Analytic Perturbation Theory, Bjorken Sum Rule and Higher Twists
R. Pasechnik, O. Teryaev and D. Shirkov
In Proceedings of "International Seminar on Contemporary Problems of Particle Physics",
dedicated to the memory of I.L. Solovtsov, Dubna, Jan. 17-18, 2008