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## Prof. Regina Demina

- Professional Preparation** Novosibirsk State University with training at Budker Institute of nuclear physics, B.S. in Physics, 1991  
Northeastern University, Ph.D. in Physics, 1995
- Appointments** Professor of Physics, *University of Rochester*, 2007 – present  
Visiting Professor, *University of Torino*, 2008-09  
Associate Professor of Physics, *University of Rochester*, 2003 – 07  
Assistant Professor of Physics, *Kansas State University*, 1999-2003  
Research Associate, *Fermi National Accelerator Laboratory*, 1995–99
- Courses taught**
- Particle physics for graduate students (15 students) – *UR*: 2008(by video at FNAL), 2011 (by video at *Oxford*), 2012-2014; *Torino*: 2009
  - Electricity and Magnetism and Modern Physics for Scientists and Engineers (250 students) – *UR*: 2004-07, 10
  - Advanced laboratory for physicists (20 students) – *UR*: 2007
  - Introductory physics: Mechanics, Electricity and Magnetism, Modern Physics (350 students)– *KSU*: 1999-2003
  - Computer simulation of the Physics processes (30 students) – *Novosibirsk*, 1988-90
- Selected committees**
- Physics Advisory Committee to Fermi National Accelerator Laboratory, 2009- 2013
  - Review of Atlas US program – 2010
  - University of Rochester steering committee of the faculty counsel, 2007-08
- Awards**
- Outstanding Junior Investigator Award, Department of Energy, 2001
  - Fellow of the American Physics Society, 2011

## Research experience

### ***CMS experiment at LHC***

- Measurement of the charge asymmetry in top-antitop production
- Measurement of Higgs width, spin, parity and couplings
- Search for SuperSymmetry in all-hadronic final states
- Convener of the SUSY commissioning, 2009-2010
- Search for contact interactions in dijet final state
- Co-leader of the USA effort on Silicon tracker construction, commissioning and operations, 2000-12
- Quality assurance of the silicon sensors for the tracking system
- Development of the radiation hard silicon technology for CMS upgrade

### ***D0 experiment at Tevatron***

- Measurement of the forward-backward asymmetry in  $t\bar{t}$  production
- Measurement of the top quark mass
- Measurement of the top quark cross section
- Search for supersymmetric top quark
- Convener of the top properties group, 2004-08
- Leader of the Run 2b upgrade group, 1999-2002
- Development of silicon sensors for Run 2b upgrade
- Study of the  $\chi_c$  production in  $p\bar{p}$  collisions: production
- Development of the fiber tracking technology using Visual Light Photon Counters

### ***CDF experiment at Tevatron***

- Convener of the SuperSymmetry group, 1998-99
- Search for supersymmetric top and bottom quark
- Study of the Higgs discovery potential at Tevatron
- Construction of the Intermediate Silicon Layers and Layer0
- Time dependent b-mixing

### ***CMD experiment at VEPP-2M (Novosibirsk)***

- Study of the interference between  $\omega$  and  $\phi$  resonances in  $e^+e^-$  collisions
- Construction of the drift chamber for CMD-2
- Tracking reconstruction software development
- Development of the GEANT-based simulation code

## Inventions

1989 USSR Patent No 1668476

R. Demina, N. D. Agaev, Y. V. Demin, E. M. Farhad-zade

*“Method to protect ground conductors from environmental corrosion.”*

## Research

2006-present – DOE “HEP research at UR”

**grants**

2004, 2007, 2008, 2009, 2014 – CMS MOU for R&D for radiation hard silicon technology for SLHC  
2002 – DØ MOU for Run 2b silicon detector construction  
2001 – Outstanding Junior Investigator award from the DOE  
2001 – NSF MRI grant for Silicon detector development for D0  
2000 – DOE EPSCOR grant for R&D of rad. hard silicon technology  
2000 – CMS MOU for Silicon tracker construction

**Selected invited presentations**

1. *“Asymmetries in  $t\bar{t}$  production”*, EPS2013, Stockholm, Sweden, July 2013
2. *“ $t\bar{t}$  production asymmetry at Tevatron”*, LHCP2013, Barcelona, Spain, May 2013
3. *“ $t\bar{t}$  production asymmetry at Tevatron and LHC”*, HCP2012, Kyoto, Japan, November 2012
4. *“ $t\bar{t}$  production asymmetry at D0”*, EPS-HEP2011, Grenoble, France, July 2011
5. *“First results from CMS”*, BNL workshop for Physics at LHC, July 2010
6. *“Silicon tracker for CMS”*, Tracking technology workshop, Florence, September 2009
7. *“Top mass measurement at Tevatron” – Aspen winter HEP workshop*, January 2008
8. *“Top quark physics at the Tevatron” Joint experimental and theoretical seminar at the Budker institute of nuclear physics, Novosibirsk, Russia, December 2006.*
9. *“Physics in USA: education, funding and research”*, lecture at Novosibirsk State University, Russia, December 2006.
10. *“Lectures on top quark physics” Summer school on heavy flavor physics, Beijing, China, August 2005*
11. *“DØ top quark measurement” Joint experimental and theoretical seminar at Fermilab, July 2005*
12. *“Search for new phenomena at Tevatron” Rencontres de Moriond QCD, La Thuille, April, 2004*
13. *“LHC Higgs discovery prospects” HCP2004, East Lansing, June 2004*
14. *“Challenges of hadron colliders” TeV4LHC workshop, FNAL, September 2004*
15. *“First Run 2 results from D0”*, APS meeting, Albuquerque, NM, May 2003
16. *“SUSY searches at Tevatron”*, SUSY99, FNAL, June 1999.
17. *“SUSY searches at Tevatron”*, Rencontres de Moriond QCD, Les Arcs, April 1998