

# Sucharit Sarkar

Curriculum Vitae

## Contact

Department of Mathematics      *Phone:*                      212-854-9251 (office)  
Columbia University                      732-766-1019 (mobile)  
2990, Broadway                      *E-mail:*              sucharit@math.columbia.edu  
New York, NY 10027                      *Website:*      math.columbia.edu/~sucharit

## Interests

Low dimensional topology and gauge theory, with particular interest in knot theory, Heegaard Floer homology and Khovanov homology.

## Education

Ph.D. in Mathematics, Princeton University.                      2005 – 2009  
*Topics in Heegaard Floer homology.*  
Advisor: Zoltán Szabó  
Bachelor of Mathematics, Indian Statistical Institute.                      2002 – 2005

## Positions

Clay Research Fellow, Clay Mathematics Institute.                      2009 – present  
Ritt Assistant Professor, Columbia University.                      2009 – present  
Postdoctoral Fellow, Mathematical Sciences Research Institute.                      2010

## Awards

Honoric fellowship, Princeton University.                      2008 – 2009  
Centennial fellowship, Princeton University.                      2005 – 2009  
S. H. Aravind Gold Medal, Indian Statistical Institute.                      2005  
KVPY scholarship, Govt. of India.                      2002 – 2005  
Silver medal, International Mathematical Olympiad, UK.                      2002  
Gold medal, International Mathematical Olympiad, USA.                      2001

## Research

1. *Commutators and squares in free groups.* Algebraic and Geometric Topology **4** (2004) 595 – 602
2. (With Ciprian Manolescu and Peter Ozsváth) *A combinatorial description of knot Floer homology.* Annals of Mathematics **169** (2009) 633 – 660
3. (With Jiajun Wang) *An algorithm for computing some Heegaard Floer homologies.* Annals of Mathematics **171** (2010) 1213 – 1236

4. *Maslov index formulas for Whitney  $n$ -gons*. Journal of Symplectic Geometry **9** (2011) 251 – 270
5. *A note on sign conventions in link Floer homology*. Quantum Topology **2** (2011) 217 – 239
6. (With Matthew Hedden and András Juhász) *On sutured Floer homology and the equivalence of Seifert surfaces*. arXiv:0811.0178
7. *Grid diagrams and shellability*. arXiv:0901.2156
8. *Grid diagrams and the Ozsváth-Szabó tau-invariant*. Mathematical Research Letters, to appear
9. *Moving basepoints and the induced automorphisms of link Floer homology*. arXiv:1109.2168
10. *A Khovanov homotopy type or two*. arXiv:1112.3932

### Invited talks

2006. Seminars at University of Virginia, SUNY Buffalo, Princeton University and Columbia University.
2007. Gökova geometry and topology conference and Georgia topology conference.
2008. Seminars at UCLA and Northwestern University.
2009. Seminars at Columbia University, MIT and Michigan State University.
2010. Categorification and low-dimensional topology conference at MSRI, ICM satellite conference on geometric topology and Riemannian geometry at Indian Institute of Science, Bangalore, William Rowan Hamilton geometry and topology workshop at Trinity College, Dublin, seminars at University of Michigan and Columbia University.
2011. Seminars at MIT, Boston College, Columbia University and Caltech.

### Teaching

Grader for calculus MAT 201 (Fall 2006 and Spring 2007), Princeton University.  
 Teacher for calculus MAT 103 (Fall 2007) and MAT 104 (Spring 2008), Princeton University.  
 Teacher for calculus CALC 4 (Spring 2011), Columbia University.

### Miscellaneous

Trainer of the Princeton team for Putnam mathematical competition (2008).  
 Doctoral committee of Rumén Zarev and Jon Bloom (Columbia 2011).