

## LIST OF PUBLICATIONS

SACHIN GAUTAM

### Dissertations.

- (1) **Ph.D.: Three contributions in representation theory: (1) Cluster algebras and Grassmannians of type  $G_2$  (2) Yangians and quantum loop algebras (3) Monodromy of the trigonometric Casimir connection of  $\mathfrak{sl}_2$**  (under the supervision of Andrei Zelevinsky and Valerio Toledano Laredo) Northeastern University, Boston, US (2011). [http://gateway.proquest.com/openurl?url\\_ver=Z39.88-2004&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:dissertation&res\\_dat=xri:pqdiss&rft\\_dat=xri:pqdiss:3460116](http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqdiss&rft_dat=xri:pqdiss:3460116)
- (2) **M.Sc.: Kazhdan–Lusztig conjectures.** (under the supervision of K.N. Raghu- van) Institute of Mathematical Sciences, Chennai, India (2005).

### Research publications.

- (1) **On a conjecture of Khoroshkin and Tolstoy** (with A. Appel and C. Wendlandt), IMRN (2022), (17 pages). <https://doi.org/10.1093/imrn/rnac334>
- (2) **Poles of finite–dimensional representations of Yangians** (with C. Wendlandt), *Selecta M.* **29**, 2023, no. 1, article 13 (68 pages). <https://doi.org/10.1007/s00029-022-00813-y>
- (3) **Three facets of R-matrices** (with A. Smirnov, C. Wendlandt and M. Yamazaki) MFO workshop reports, 2021, (25 pages). <https://doi.org/10.14760/OWR-2021-51>
- (4) **The meromorphic R-matrix of the Yangian** (with V. Toledano Laredo and C. Wendlandt), in Alekseev, A., Frenkel, E., Rosso, M., Webster, B., Yakimov, M. (eds) *Representation Theory, Mathematical Physics, and Integrable Systems*. Progress in Mathematics, vol 340, Birkhäuser, Cham, 2021 (69 pages). [https://doi.org/10.1007/978-3-030-78148-4\\_7](https://doi.org/10.1007/978-3-030-78148-4_7)
- (5) **An explicit isomorphism between quantum and classical  $\mathfrak{sl}(n)$**  (with A. Appel), *Transformation groups* **25**, 2020, no. 4, 945-980. <https://doi.org/10.1007/s00031-019-09543-6>
- (6) **Meromorphic tensor equivalence for Yangians and quantum loop algebras** (with V. Toledano Laredo), *Publ. Math. IHES.* **125**, 2017, 267-337.

<http://dx.doi.org/10.1007/s10240-017-0089-9>

- (7) **Yangians, quantum loop algebras and abelian difference equations** (with V. Toledano Laredo), *J. Amer. Math. Soc.* **29**, 2016, no. 3, 775-824. <http://dx.doi.org/10.1090/jams/851>
- (8) **Monodromy of the trigonometric Casimir connection of  $\mathfrak{sl}_2$**  (with V. Toledano Laredo), *Noncommutative Birational Geometry, Representations and Combinatorics* (A. Berenstein and V. Retakh eds.), *Contemporary Mathematics* **592**, AMS 2013, 137–176. <https://doi.org/10.1090/conm/592/11864>
- (9) **Yangians and quantum loop algebras** (with V. Toledano Laredo), *Selecta M.* **19** 2013, no. 2, 271-336 <http://dx.doi.org/10.1007/s00029-012-0114-2>
- (10) **Cluster Algebras and Grassmannians of type  $G_2$** , *Algebras and Representation Theory* **13**, 2010, no. 3, 335-357. <https://doi.org/10.1007/s10468-008-9126-1>
- (11) **On multicolor non-complete Ramsey graphs of star graphs** (with A. Srivastava and A. Tripathi), *Discrete Applied Mathematics*, **156**, 2008, no. 12, 2423-2428. <https://doi.org/10.1016/j.dam.2007.10.020>

### Preprints.

- (1) **The R-matrix formalism of quantized enveloping algebras** (with M. Rupert and C. Wendlandt), arxiv:2210.06770 (45 pages). <https://arxiv.org/abs/2210.06770>
- (2) **Elliptic quantum groups and their representations** (with V. Toledano Laredo), arxiv:1707.06469 (56 pages). <https://arxiv.org/abs/1707.06469>

### In preparation.

- (1) **Lattice operators for quantum affine algebras** (with V. Toledano Laredo), 2023.
- (2) **The R-matrix of the affine Yangian** (with A. Appel and C. Wendlandt), 2023.