Comments and Errata: Stephen R Doty

Comments

1. (Reporting an inaccuracy.) Starting in 2001, many papers giving presentations of Schur algebras, q-Schur algebras, and generalized Schur (and q-Schur) algebras were published, by myself with Giaquinto, myself, Du and Parshall, and a number of others. In all of those papers, the (q)-Serre relations were imposed on the generators of of the plus and minus parts of the (quantized) enveloping algebra. However, as pointed out by R. Rouquier, the (q)-Serre relations are *consequences* of the other defining relations, and thus can be omitted from the presentations in all of those papers. Details and a proof can be found in the paper (with Anthony Giaquinto): [*Cellular bases of generalised q-Schur algebras,* Math. Proc. Camb. Philos. Soc. 162, 533–560 (2017)].

Errata

1. (with J. Matthew Douglass) *Schur–Weyl duality and the free Lie algebra.* Proc. Amer. Math. Soc. 145, 3263–3277 (2017).

   Corollary 2.4 is incorrect. See Remark 6.1 in [S. Donkin, J. Algebra 526 (2018)].

2. (with David J. Benson) *Schur–Weyl duality over finite fields.* Arch. Math. 93, 425–435 (2009).

   The proof of Lemma 4.1 has a minor mistake, although the result is correct. See the proof of Lemma 3.2 in [T. Cruz, Commun. in Algebra 47 (2019)] for a correct argument.

3. (with Richard Dipper) *The rational Schur algebra.* Represent. Theory. 12, 58–83 (2008).

   The proof of Theorem 5.2 contains a gap, although the result is correct. The argument is completed in Section 1 of [S. Donkin, J. Algebra 405 (2014)]. As pointed out in that same reference, the presentation (in characteristic 0) of $S(n;r,s)$ given in Section 7 is incorrect. A correct presentation can be found in Section 6.2 of [Doty, Giaquinto, and Sullivan, Adv. Math. 221 (2009)].

4. *Presenting generalized q-Schur algebras.* Represent. Theory. 7, 196—213 (2003).

   In equations 8.1(b), the right hand side is missing a q-binimial coefficent. In equations 8.4(b), the right hand side is missing an ordinary binomial coefficient. (Thanks to Chris Bowman for reporting this.)

5. (with Georgia Benkart) *Derangements and tensor powers of adjoint modules for* $\mathfrak{sl}_n$. J. Algebraic Combin. 16, 31–42 (2002).

   There is an error in 1.15–1.18 in the published version of this paper. A corrected version of the published paper is available at https://doty.math.luc.edu/pubs/bd-08-02-2004.pdf and on the arXiv. (Thanks to Alberto Elduque for pointing out the error.)

6. (with Anthony Giaquinto) *Presenting Schur algebras.* Internat. Math. Res. Notices. 2002, 1907 (2002).

   There is a small mistake in the statement of Theorems 2.3 and 3.3. The definitions of Y_- in equations (2.7) and (3.9) are incorrect as stated. In those sets one should replace the content χ by a different content function χ' which is defined so that $\chi'(x_\alpha) = \varepsilon_{\min(i,j)}$ if $\alpha = \varepsilon_i - \varepsilon_j$.

7. (with Karin Erdmann, Stuart Martin, and Daniel K. Nakano) *Representation type of Schur algebras.* Math Z. 232, 137–182 (1999).

The Schur algebra $S(2, 11)$ for $p = 2$ is tame. Theorems (A) and (B) in Section 1.2 should be corrected accordingly. The mistake comes from the first sentence in 3.5, which is incorrect. (Thanks to Qi Wang for pointing out the error.)