Signed Gauss paragraphs and graded matrices

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Abstract

In this talk we explain a method to construct minimal realizations of signed Gauss paragraphs. We also prove that the genus of the ambient surface of these minimal realizations can be seen as a function of the maximum number of Carter's circles. For the case of signed Gauss words, we use intersection pairing theory on a generating set of $H_1(S_w, Z)$, given in [1], to present a short solution of the signed Gauss word problem. We relate this solution with the one given by G. Cairns and D. Elton. Moreover, we define the join operation on signed Gauss paragraphs to produce signed Gauss words such that both can be realized on the same minimal genus PL-surface.

We connect the characterization of signed Gauss paragraph with the recognition virtual links problem. Also we present a combinatorial algorithm to compute, in a easier way, skew-symmetric graded matrices [5] for virtual knots thorough the concept of triplets [4]. Therefore, we can prove that the Kishino's knot is not classical, moreover, we prove that the virtual knots of the family B given in [2] are not classical knots.

References

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