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Making surfaces from paper squares

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Abstract

You have a big pile of N squares of lined paper. Suppose you want to glue them together, edge to edge and consistent with the lines, so the result is a surface of genus three. How many ways are there of doing it?

I will show that this number is of the form CN^d for a certain d which can be understood in terms of a certain graph, but where d is also the complex dimension of a certain stratum in the moduli space of abelian differentials on Riemann surfaces.

Further, C is a multi-zeta value with a great deal of number-theoretic content.

Date : January 31, 2019
Time : 11:00
Place: IMBM Seminar Room, Boğaziçi University South Campus