

Comparing combinatorial Models of the Moduli space of Riemann surfaces

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Abstract: I will compare two combinatorial models of the Moduli space of two dimensional cobordisms. More precisely, I will construct direct connections between the space of metric admissible fat graphs due to Godin and the chain complex of black and white graphs due to Costello. Furthermore, I will construct a PROP structure on admissible fat graphs, which models the PROP of Moduli spaces of two dimensional cobordisms. I will use the connections above to give black and white graphs a PROP structure with the same property.

If time permits, I will mention how Bødigheimer's model of radial slit configurations fits into this picture; and how this shows that the space of Sullivan diagrams, is homotopy equivalent to Bødigheimer's Harmonic compactification of Moduli space.