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David Radnell* (david.radnell@aalto.fi), Aalto University, Dept of Mathematics and Systems Analysis, Espoo, Finland. *What is a higher-genus correlation function?*

A rigged Riemann surface is a punctured Riemann surface with the data of a local holomorphic coordinate specified at each puncture. Correlation functions in chiral conformal field theory are a certain class of meromorphic functions on the moduli space of rigged Riemann surfaces. In genus-zero this is expressed by the correlation functions being meromorphic functions of the puncture locations on the sphere. In genus-one, dependence on the moduli space parameter is expressed by modular invariance which has been extensively studied in the vertex operator algebra literature.

In higher-genus, precisely defining the class of meromorphic functions on the rigged moduli space requires a particular holomorphic coordinate system and fiber structure on this infinite-dimensional complex manifold. We will discuss how this can be done within the framework of Teichmüller theory and also comment on a conjectural property of these functions. (Received February 01, 2016)