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Worldsheet Variables for Cluster Configuration Spaces

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We introduce worldsheet variables for a certain moduli space associated with a Dynkin diagram of finite type. The construction is based on gluing a pair of A-type quivers. We find new nonlinear factors that characterize such spaces as hypersurface arrangement complement. We study various topological properties using a finite-field method and propose conjectures about quasi-polynomial point count, dimensions of cohomology, and Euler characteristics for the Dn space up to n=10. These new variables have applications for string integrals, cluster alphabets, etc.

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