

Physics Seminar: Victor Rodriguez

Wednesday, October 29 · 2:00 – 3:00pm in room 313

Title: D-instantons and the Gluing Formula

Abstract: In this talk I will present a recent formula that enables the gluing of conformal boundary conditions to a given closed string amplitude without requiring explicit integration of conformal blocks over the relevant moduli space. Instead, the gluing formula localizes the problem to a single sum over on-shell string states. In the setting of two-dimensional quantum gravity, this procedure is interpreted as the gluing of trumpets of arbitrary type. A particularly interesting case is that of D-instanton boundary conditions, which mediate non-perturbative effects in string theory. In this case, the gluing formula captures only part of the full contribution. I will describe a related localization argument that computes the remaining pieces arising from open string degenerations. This framework has been shown to work in low-dimensional string theories such as the Virasoro minimal string and the Complex Liouville string, and I will discuss prospects for its generalization to higher-dimensional string theory. Based on current work with S. Collier and L. Eberhardt.