Stochastic Loewner evolution and Dyson's circular ensembles

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Corrigendum

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In the published paper [1], it was noted that the only form of the result for the joint p.d.f. of the boundary points that is consistent with conformal field theory (CFT) is $\prod_{j<k}(e^{i\theta_j} - e^{\theta_k})^{2/\kappa}$, which is different from the equilibrium distribution of the corresponding Dyson process, where the exponent is $4/\kappa$. A possible explanation of this discrepancy was given.

Recently, however, we have performed an *ab initio* CFT calculation [2]. This confirms the exponent $2/\kappa$, but it also shows that the correct source of the discrepancy lies in the assumption above equation (13) that the measure on the curves is conformally invariant. This is too strong—if instead we allow for it to be invariant up to a conformal factor $\prod_j |g_t'(e^{i\theta_j})|^{h_{2,1}}$ (where $h_{2,1} = (6-\kappa)/2\kappa$), then the results of the two computations agree.

The corresponding Calogero–Sutherland model then turns out out to have $\beta = 8/\kappa$. The reader is referred to [2] for details.

References

[1] Cardy J 2003 *J. Phys. A: Math. Gen.* **36** L379
[2] Cardy J 2003 *Preprint* hep-th/0310291

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