

# Resurgence in complex Chern-Simons theory

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## Résumé

Three-dimensional complex Chern-Simons theory is deeply related to physics and mathematics in low dimensions. In particular, the perturbative expansion of its partition function gives rise to factorially divergent series, which exhibits interesting resurgent structure and provides new insights into various topics such as 3D-3D correspondence and quantum modularity. In this informal talk, I will discuss the resurgent property of the partition function on some hyperbolic manifolds at a generic level  $k$ , extending previous works on the level 1 case. Along the way, all background materials will be carefully introduced to make the talk also accessible to the non-experts. This is based on an upcoming work with Jie Gu.