Borel Analysis of Topological String on Calabi-Yau manifolds

- X a CY, 6-dimensional,
  z deformation parameter, $\Omega(z)$ holomorphic 3-form
  $\Pi_q = \int_{C_q} \Omega$, $C_q \in H_3(X, \mathbb{Z})$ period of D-Brane of charge q
  BPS states $\longrightarrow$ $BPS(q, z)$ invariant associated to the BPS brane.

- Topological String amplitudes
  F_g encodes enumerative information of X
  $F_g \sim (2g-2)!$
  $F = \sum_g F_g g_s^{2g-2}$ is asymptotic.

- Resurgence
  $BF = \sum_g \frac{F_g}{(2g-2)!} x^{2g-2} \sim S_A \log(x-A) F_A(x-A)$

$$\boxed{A \propto \Pi_q, \quad S_A = BPS(q, z).}$$

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