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## Canonical metrics on singular spaces Open Problems

1. Characterize the case of equality in the stratified Yamabe problem: If  $M$  is a stratified space and

$$Y(M, g) = Y_{\text{loc}}(M, g),$$

then is  $g$  necessarily conformal to a metric with special holonomy?

2. Find effective estimates for the suspended Yamabe invariants  $Y(Z \times \mathbb{H}^k)$  when  $Z$  is a compact stratified space – or even when  $Z$  is just a compact smooth manifold.
3. Let  $(M, g)$  be a compact Kähler-Einstein metric which has a crossing edge singularity along a general divisor with simple normal crossings  $D \subset M$  with cone angle  $2\pi\beta$ . Characterize the maximal value of  $\beta \in (0, 1)$  for which such a metric exists. Said differently, study convergence properties of these metrics as the cone angle  $2\pi\beta_j$  converges monotonically upward.