

# First Joint Meeting Brazil Italy of Mathematics Special Session: Geometric Topology and Dynamics

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**Title:** Surfaces with spherical metrics

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**Abstract:** McOwen and Troyanov proved existence and uniqueness of conformal metrics of constant non-positive curvature and conical singularities of prescribed angles on every compact Riemann surface with marked points, provided the obvious Gauss-Bonnet constraint is satisfied. Thus, the moduli space of such metrics can be essentially identified to the moduli space of Riemann surfaces with marked points.

Quite differently, in constant positive curvature no such existence and uniqueness hold in general. I will illustrate that there is a natural obstruction to the existence, which can be easily expressed in terms of the angles. Moreover, given angles  $\underline{\vartheta}$  for which such obstruction vanishes, I will discuss some properties of the moduli space of surfaces of genus  $g$  with a metric of curvature 1 and conical points of angles  $\underline{\theta}$ .