

# **Toric Kähler-Sasaki Geometry**

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In the same way that a contact manifold determines and is determined by a symplectic cone, a Sasaki manifold determines and is determined by a Kähler cone. Kähler-Sasaki geometry is the geometry of such a pair.

In this course, after an introduction, I will present an action-angle coordinates approach to toric Kähler geometry and how it was recently generalized, by Burns-Guillumin-Lerman and Martelli-Sparks-Yau, to toric Kähler-Sasaki geometry. As an application, I will describe how this approach can be used to relate a recent new family of Sasaki-Einstein metrics constructed by Gauntlett-Martelli-Sparks-Waldram in 2004, to an old family of extremal Kähler metrics constructed by Calabi in 1982.