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Benjamin Bakker*, Dept. Of Mathematics, University of Georgia, Athens, GA. *The birational geometry of complex ball quotients.*

Ball quotients arise frequently in algebraic geometry as moduli spaces—for instance, those of low genus curves, del Pezzo surfaces, certain K3 surfaces, and cubic threefolds—and in this case the birational geometry has important implications to the geometry of the moduli problem. In joint work with J. Tsimerman, we show that in dimension $n \geq 4$ every smooth complex ball quotient is of general type, and further that the canonical bundle $K_{\overline{X}}$ of the toroidal compactification \overline{X} is ample for $n \geq 6$. The proof uses a hybrid technique employing both the hyperbolic geometry of the uniformizing group and the algebraic geometry of the toroidal compactification. We will also discuss applications to bounding the number of cusps and the Green–Griffiths conjecture. (Received March 21, 2017)