

## LAMÉ FUNCTIONS AND SPECIAL ELLIPTIC INTEGRALS

MARIO BONK

In a recent paper Eremenko et al. investigated metrics on tori that have constant positive curvature and one conic singularity. They showed that this is related to a class of elliptic differentials characterized by the property that on the underlying torus they have only one zero and only double poles with vanishing residua. These differentials turn out to be connected to Lamé functions. In my talk I will provide an analytic perspective for these results and show that this also leads to the consideration of periods of differentials with only simple poles.