

ABSTRACT. We classify compact surfaces with torsion-free affine connections for which every geodesic is a simple closed curve. In the process, we obtain completely new proofs of all the major results [4] concerning the Riemannian case. In contrast to previous work, our approach is twistor-theoretic, and depends fundamentally on the fact that, up to biholomorphism, there is only one complex structure on  $\mathbb{CP}_2$ .