

The cohomology ring of the sapphires that admit the Sol geometry

Sérgio Tadao Martins* and Daciberg Lima Gonçalves

*Institute of Mathematics and Statistics,
University of São Paulo, Brazil.

Resumo

Let G be the fundamental group of a sapphire that admits the *Sol* geometry and is not a torus bundle. We determine a finite free resolution of \mathbb{Z} over $\mathbb{Z}G$ and calculate a partial diagonal approximation for this resolution. We also compute the cohomology rings $H^*(G; A)$ for $A = \mathbb{Z}$ and $A = \mathbb{Z}_p$ for an odd prime p , and indicate how to compute the groups $H^*(G; A)$ and the multiplicative structure given by the cup product for any system of coefficients A .