Counting triangles formula for the first Chern class of a circle bundle

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Abstract

We consider the problem of the combinatorial computation of the first Chern class of a S1-bundle. N.Mnev found such a formula in terms of canonical s .We find a new expression of Mnev's curvature by counting triangles in a cyclic word. This cyclic word represents the multivalued section given by the faces of the triangulation of the bration. Our formula is different from that of Mnev. In particular, it is cyclically invariant by its very form.