COMPACT 3-MANIFOLDS VIA 4-COLORED GRAPHS

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The representation of closed 3-manifolds by 4-colored graphs has been independently introduced in the late seventies by S. Lins and by Pezzana's research group in Modena (see [3] and [1]), by using dual constructions. The attempt of extending the representation to 3-manifolds with boundary was performed by C. Gagliardi in [2] by using a slightly different class of colored graphs, but the result was not suitable for a satisfactory computer tabulation of non closed 3-manifolds.

We show that the whole class of 3-manifolds with non-empty non-spherical boundary can be represented by 4-colored graphs as the closed ones. This gives the opportunity of starting a more efficient computer aided tabulation. Partial results about enumeration and classification according to the minimal number of vertices of the graphs have been obtained.

References

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[3] S. Lins, *Gems, computers and attractors for 3-manifolds*, Knots and Everything 5, World Scientific, (1995).

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