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Oleg S. Scherbakov

The Multitours and the Polytops of the Binary Trees

The minimal fillings of finite metric spaces are an object that appeared as a generalization of the concepts of shortest tree and a minimal filling in the sense of Gromov. It is known that the weight of a minimal filling of a given type can be found by linear programming and by so-called multitours technique. Combining both approaches, the some results were obtained which will be discussed in this report.

A description of the polytop and an explicit formula for the weight of the minimal filling of the "snake–type" binary tree is obtained. An explicit formula for the weight of the minimal filling of the binary tree with 3 moustaches is obtained. It is proved that the multiplicity of an irreducible multitour does not exceed 4 for any binary tree consisting of four so-called sprouts.