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ESTIMATION OF THE FRACTAL DIMENSIONS OF CLOUDS

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Abstract. Thesis concerns to a popular theme the fractal dimension of various objects and structural formations. The relevance of the theme is followed of the extensive literature in various fields of modern natural science on the use of fractals and the calculation of fractal dimensions of objects. The box-counting method, used in such distant fields as economics, medicine et cetera is applied to the study of the structure of cloud formations. The high importance of the topic predetermines a significant degree of its development. The complexity of the topic studied in the work is due to the differences of the calculation results depending on the location of the cells covering the object under study. The problems associated with such variability have not yet been resolved, which makes the result new. The article presents such examples found by the author, in which the results of calculations for the fractal dimensions of the same object really differ. There were also found examples of objects whose fractal dimensions turn out to be invariant with respect to the transformations mentioned in the article. An error estimate is given. These results are obtained in the work are new

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