**Belarusian State University   
Faculty of Mechanics and Mathematics  
Department of nonlinear analysis and analysis of the economy**

**Annotation to the diploma work  
"The mass distribution principle for calculating the Hausdorff dimension of fractals"**

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**2016**

Diploma work contains:

– 34 pages,

– 9 illustrarions,

– 7 used sources.

Keywords: EMPIRICAL MEASURE, HAUSDORFF MEASURE, HAUSDORFF DIMENSION, FRACTAL, THE MASS DISTRIBUTION PRINCIPLE, POOLS OF PROBABILITY MEASURES, BILLINGSLEY ENTROPY, MORAN EQUATION, THE CODING SPACE.

The aim of this thesis is to study the concepts of the Hausdorff measure and dimension of a metric space and the different ways to calculate: the mass distribution principle, Theorem Billingsley Yang, Moran equation. Using proven methods to make the calculation of the dimensions of self-similar fractal geometry.

The main tools of the work are:

- sequence space with a finite number of values provided with a cylindrical metric;

- Hausdorff hyperspace;

- empirical measures;

- strong law of large numbers;

- methods of the Lebesgue integral theory.

We describe and justify the following methods of calculating the Hausdorff dimension:

- the mass distribution principle;

- Billingsley — Young theorem;

- Moran equation.

Diploma work is theoretical point. Its results can be used in further studies of dimensions of self-similar fractals.

Diploma work performed by the author independently.