



About Geometrical Nature of Rogue Waves

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The phenomenon of rogue waves shows that extreme waves arise much more more often than the statistics of heights of waves predicts. In addition, in computing experiments these waves arise even more often. Consequently there is an important question of the nature of rogue waves. Existing physical theories about emergence of these waves still are far from the uniform point of view.

In the present report we offer an unexpected view of this problem. It appears that in phase space of superficial waves the set of extreme waves has a considerable measure. In made computing experiments this measure is 1-5%. It coincides with our previous estimates of statistics of rogue waves.

In the report it will be shown that rogue waves often arise because the geometry of their surface is ordinary in phase space. We consider cases 2D and 3D.