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Typical geometry of rogue waves

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Our talk presents geometry results of numerical modeling of rogue waves based on the full nonlinear equations of hydrodynamics. We describe the widespread types of rogue waves in computational experiments.
We received a lot of rogue waves in our computing experiments. About 95% of these waves have the typical form of steep ridge ("wall of water"). Other rogue waves have the form of deepest depression ("hole in the sea") or represent several waves of very big height ("three sisters").
Rogue waves from our experiments are one of such individual waves. The most widespread rogue waves have the form of wall of water. Both parts of this wave from the left minimum to the maximum and from the maximum to the right minimum are well-approximated by three-degree polynomials.
It gets the follow type after linear transformation when the ordinate of maximum point is transferred to the point with coordinates.

References

Zakharov V.E., Shamin R.V and Yudin A.V.: Energy Portrait of Rogue Waves, JETP Letters, 2014, Vol. 99, No. 9, pp. 514–517, DOI: 10.1134/S0021364014090136