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Rogue Waves and Concentration of Energy of the Wave Field

Roman Shamin
Peoples' Friendship University of Russia (RUDN University), Moscow, Russian Federation (roman@shamin.ru)

The report considers the movement of the wave field, in which there is a concentration of energy.

Using computational experiments, we found that this concentration of energy is stable in time. In addition, this concentration may suddenly increase, which leads to the formation of rogue waves. We observed different scenarios of the development of this concentration. First, the concentration may continue to grow and form a rogue waver. Second, concentration may lead to the collapse of the wave. In this case, rogue wave fails to occur. This behavior is in good agreement with our previous computational experiments (see [1-3]).

To describe the dynamics of the concentration we use a special random process.

References

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