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## Multi-Soliton, Breathers, Lumps And Interaction Solution

Nonlinear evolution equations (NLEEs) have a widespread application in the field of mathematical physics and engineering such as fluid, plasma, nonlinear optics, marine science and so on. In soliton theory [1-3], finding exact solutions of NLEEs is one of the hot topics in this field. Many researchers are interested in study this topic. To obtain the exact solutions of NLEEs, there are many powerful and systematic approaches have been developed, such as the inverse scattering transformation [4], Darboux transformation [5], the variable separation method [6], and Hirota bilinear methods [7].

Among these methods, the Hirota bilinear method is widely popular due to its simplicity and directness. Recently, rogue wave solutions [8,9] (being as a special solution of the rational solution) have drawn a big attention of mathematicians and physicists, which was first used to describe the momentous disastrous ocean waves. In contract to the rogue wave solution, lump solution is a special kind of rational solution, rationally localized in all directions in the space. In 2002, Lou et. al studied the lump solution with the variable separation method [10]. Very recently, Ma et al. proposed the positive quadratic function to get the lump solution.

Special examples of lump solutions have been found, such as the KPI equation [11], Boussinesq equation [12], BKP equation [13] and so on. As a kind of rational function solutions, lumps [14-16] are localized in all directions in the space, lump-type [17,18] solutions are localized in almost all directions in the space. Rogue waves [18,19] are localized in both space and time, and appear from nowhere and disappear without a trace [20], have taken the responsibility for numerous marine disasters. The (2+1)-dimensional ANNV Eq. (1) has been studied by many authors in recent years. for example, its algebraic-geometrical solutions have been explicitly given by using a nonlinearized method of Lax pair, the N-soliton solution and Pfaffian expression of solution have been discussed and derived by using the Hirota method [23] and some periodic wave solutions have been found in Ref. [24].