

## Back Ultradiscretized Box and Ball System

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The famous Box and Ball system is a ultradiscrete equation obtained from the discrete Lotka-Volterra equation through the coordinates and dependent variable transformation. We propose the following discrete equation,

$$\frac{1}{u_{n+1}^{m+1}} - \frac{1}{u_n^m} = \delta(u_{n+1}^m - u_n^{m+1}),$$

where  $m$  and  $n$  are integers and  $\delta$  is a time-interval. We call it “ BBB system ”(Back ultradiscretized Box and Ball system). A box and Ball system is obtained by ultradiscretizing BBB system. However in the ultradiscrete BBB system the number of balls in a box is arbitrary. It could be over the capacity of the box or a negative integer. We discuss solutions and higher order conserved quantities of BBB system.