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Kenichi Maruno* (kmaruno@utpa.edu), Department of Mathematics, University of Texas-Pan American, 1201 W. University Drive, Edinburg, TX 78541. *Some properties of higher-order mappings and their ultra-discrete analogues.*

We discuss about higher-order mappings which have bilinear forms. From the conserved quantities of the bilinear partial-difference equations (Hirota-Miwa equation), we can construct the integrals of higher-order mappings. These mappings can be ultra-discretized, i.e., we can make equations described by Max and +. We also discuss some properties of ultra-discrete analogues of higher-order mappings. (Received September 25, 2006)