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Vladimir V Kovalchuk* (vladimir.kovalchuk@du.edu). *Structure of VOAs of type $W(2,N)$* . Preliminary report.

The problem of classifying vertex algebras by strong generating type has recently received some attention. As a basic but nontrivial case, we consider the classification of vertex algebras of type $W(2,N)$, that is, vertex algebras with a strong generating set consisting of a Virasoro field, and a primary field of weight N . Well-known examples include the principal W -algebras of sl_3 , sp_4 , and G_2 , which are of types $W(2,3)$, $W(2,4)$, and $W(2,6)$ respectively, the singlet algebras, and certain Virasoro minimal model extensions. We shall give the complete classification for $N \leq 7$, and also discuss some strong restrictions about what can occur in the general case. This is a joint work in progress with Andrew Linshaw and Dan Graybill. (Received September 15, 2019)