1122-05-159 **Allen Herman*** (allen.herman@uregina.ca), Department of Mathematics and Statistics, University of Regina, Regina, SK S4S 0A2, Canada. *The recognition problem for table algebras.*

We will discuss aspects of the table algebra recognition problem. Which semisimple algebras with involution have table algebra bases? If there is a table algebra basis, does it have an integral one? An interesting example is the 5-dimensional noncommutative semisimple algebra with conjugate transpose involution over $\mathbb{C}$, for which only non-integral table algebra bases exist. Other issues for recognition which I will raise are algorithms for deciding when a given element of the algebra belongs to a table algebra basis, and computational methods for describing all standard integral table algebra bases for a given algebra. I will present preliminary results on these issues in dimensions up to 5. The results have been obtained in joint work with Mikhael Muzychuk and Bangteng Xu. (Received August 12, 2016)