1089-08-218 **Jonathan D.H. Smith***, Department of Mathematics, 396 Carver Hall, Iowa State University, Ames, IA 50011. *Directional algebras and digroups.* Preliminary report.

Given a constant-free type, a directional type is obtained by pointing to each of the arguments of the original, undirected type. For each axiomatization of a variety of algebras of constant-free type, a corresponding directional variety is determined. Loday's dimonoids and digroups are shown to arise, using the general procedure, from suitably axiomatized semigroups and groups respectively. For quasigroups, various choices of equational bases lead to various varieties of directional quasigroups. Under one natural axiomatization, the variety of quasigroups is shown to be directionally complete, in the sense that the corresponding directional variety is again the variety of quasigroups. Another axiomatization yields $(4+2)$-quasigroups. Digroups are then shown to be equivalent to a certain class of $(4+2)$-quasigroups. (Received February 15, 2013)