1078-08-38   **David M. Clark*** (`clarkd@newpaltz.edu`), Mathematics Department, FOB E1, SUNY, New Paltz, NY 12561. *Evolution of algebraic terms: Term to term operation continuity.*

This work was inspired by recent successful applications of evolutionary computation to the problem of finding terms to represent arbitrarily given operations on a primal groupoid. Evolution requires that small changes in a term result in small changes in the associated term operation. We will present two readily testable conditions under which a finite groupoid is guaranteed to have this continuity property: an algebraic condition and an asymptotic condition. We will show compelling evidence that most primal groupoids satisfy both of these conditions. We will then display some very large discriminator terms that were found by evolution and are demonstrably not constructible by previously known methods. (Received November 17, 2011)