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Christine E Heitsch* (heitsch@math.gatech.edu), School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332-0160. *Meanders and RNA Folding*.

A closed meander of order n is a non-self-intersecting closed curve in the plane which crosses a horizontal line at $2n$ points. Meanders occur in a variety of settings from combinatorial models of polymer folding to the Temperley-Lieb algebra, yet the exact meander enumeration problem remains open. Building on results for plane trees and noncrossing partitions motivated by the biology of RNA folding, we prove that meanders are connected under appropriately defined local move transformations. The resulting meander graphs have some interesting characteristics and suggest new approaches to the enumeration question. As we will explain, meanders also relate to the challenging biomathematical problem of comparing different possible folds for an RNA sequence. (Received February 10, 2009)