1138-05-219   **Eva Czabarka*** (`czabarka@math.sc.edu`), **Laszlo A. Szekely** and **Stephan Wagner**. *A tanglegram Kuratowski theorem.*

A tanglegram of size n is a pair of binary trees on n leaves with a matching between the leaves. It is used in phylogenetics (e.g. the evolutionary trees of parasites and hosts, the matching giving which parasite exploits which host). A tanglegram layout is a straight line drawing where only edges in the matching can cross. The tanglegram crossing number is the minimum crossing number among all of the layouts. It is related the biologically relevant quantities (e.g. number of times parasites switch hosts) We give an analog of the Kuratowski theorem; i.e. we show that a tanglegram has tangle-crossing number 0 unless it contains one of two size 4 tanglegrams as an induced subtanglegram. (Received February 09, 2018)