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**Sergei Chmutov\*** ([chmutov@math.ohio-state.edu](mailto:chmutov@math.ohio-state.edu)), 1680 University Drive, Mansfield, OH 44906. *Virtual linking numbers and the Conway polynomial*. Preliminary report.

We generalize to virtual link well known theorems of Hosokawa, Hartley, and Hoste which state that for an  $m$ -component link  $L$  the coefficients  $c_i(L)$  of the Conway polynomial of  $L$  vanish when  $i \leq m - 2$  and the coefficient  $c_{m-1}(L)$  depends only on the linking numbers  $l_{ij}(L)$  between the  $i$ -th and  $j$ -th components of  $L$ . This coefficient is equal to the determinant of a certain matrix composed of the linking numbers. This determinant can be computed using the matrix-tree theorem from graph theory.

For virtual links there are two different types of the linking number and two Conway polynomials, ascending and descending. We generalize the theorem above to virtual links. In this case the determinant representing  $c_{m-1}(L)$  is related to the oriented version of the matrix-tree theorem. This is a joint work with my students Z.Cheng, T.Dokos, and J.Lindquist. (Received February 16, 2010)