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**Frederick R. Cohen, Rafal Komendarczyk and Clayton Shonkwiler\***, Department of Mathematics, University of Georgia, Athens, GA 30602. *Homotopy periods of link maps and Milnor's invariants*. Preliminary report.

Given a parametrized  $n$ -component link  $L$  in  $\mathbb{R}^3$ , the parametrization produces a natural evaluation map  $e_L$  from the product of  $n$  circles to the configuration space of  $n$  distinct points in  $\mathbb{R}^3$ . In the  $n = 2$  case, the classical fact that the linking number of  $L$  equals the degree of its Gauss map implies that there is a one-to-one correspondence between link homotopy classes of 2-component links and homotopy classes of maps from the product of two circles to the configuration space of two points in  $\mathbb{R}^3$ . Koschorke conjectured that the equivalent result holds for arbitrary  $n$  and proved that this conjecture is true for Brunnian links. In this talk I will give an explicit description of Koschorke's correspondence for Brunnian links which leads to a novel characterization of the set of Brunnian links and to geometric interpretations of Milnor's  $\mu$ -invariants for string links. (Received August 01, 2011)