Baogang Xu (baogxu@njnu.edu.cn), 1 Wenyuan Road, Nanjing, 210023, China, Nanjing, Jiangsu 210023, Peoples Rep of China, and Xiaoya Zha* (xzha@mtsu.edu), KOM 271, 1301 East Main Street, Murfreesboro, TN 37132. Nonhomotopic loop system and thinkness of graphs embedded in surfaces. Preliminary report.

A nonhomotopic loop system $\mathcal{L} = \{l_i, i = 1, \dots, t\}$ of a 2-dimension compact closed surface is a collection of loops with a common base point x such that l_i and l_j only intersect (transversely or not) at x and are not homotopic to each other for $1 \leq i < j \leq t$. The thickness of a graph G is the minimum number of planar subgraphs that G can be edge-partitioned into. Study of nonhomotopic loop system may help to estimate the thickness of graphs in terms of their genera (orientable or nonorientable). In this talk, we discuss the upper and lower bounds for maximum nonhomotopic loop systems of surfaces. (Received January 07, 2017)