1077-68-2460 **Erin Chambers*** (`echambe5@slu.edu`). *Computing interesting topological features on surface embedded graphs.*

Recently, there have been many algorithms developed for surfaced embedded graphs. In general, these algorithms exploit the extra information gained from an embedding on some underlying surface to speed up computations. In particular, problems which compute non-trivial cycles (either under homology or homotopy) have been of interest, particularly since they have such natural applications in graphics. These problems also have interesting connections to computing maximum flows or minimum cuts, which is a classical optimization problem with numerous applications. We will survey recent techniques and results in this area. (Received September 22, 2011)